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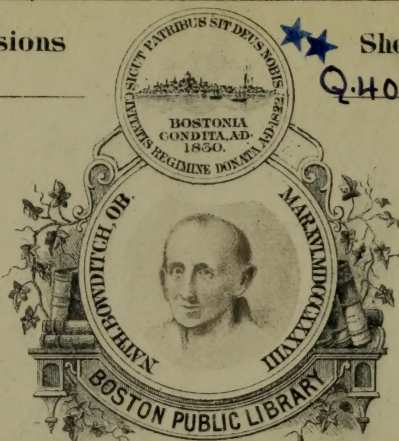
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FROM THE

Bowditch Fund.

Recd.

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Q.405.94/52

Opusculū Johanni-
nis de sacrobusto sphericū .
cū figuris optimis et novis
textū in se . sine ambiguita-
te declarantibus .



Bowditch
Mar. 23, 1938
D

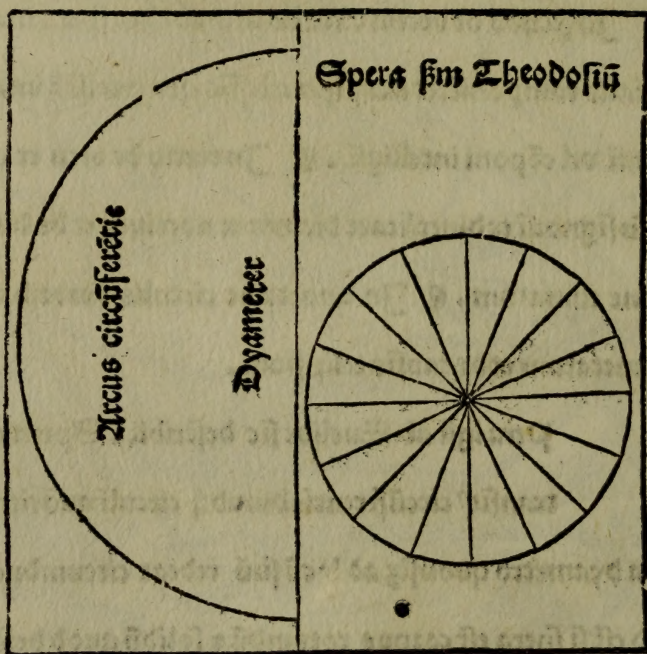
Ractatum de spera quattuor ca-
pitulis distinguimus. ¶ Dictu-
ri primo quid sit spera. Quid sit
eius centrum. Quid axis spere.

Quid pol⁹ mūdi. Quot sunt spere ⁊ q̄ sit forma mūdi.

¶ In secūdo de decem circulis ex quib⁹ hec spera ma-
terialis componit̃. et illa supercelestis que per istā ima-
ginat̃ vel cōponit̃ intelligit̃. ¶ In tertio de ortu et oc-
casu signorū et diuersitate dierum et noctium et de diu-
sione climatum. ¶ In quarto de circulis ⁊ motibus
planetarum et de causis eclipsium.

Spera igit̃ ab Euclide sic describit̃. Spera est
transit⁹ circūferentie dimidiij circuli quociens
fixa dyametro quousq; ad locū suū redeat circumducit̃
Id est si spera est corpus rotundū ⁊ solidū quod descri-
bitur ab arcu semicirculi circūducto. ¶ Spera igitur
a Theodosio sic describit̃ Est corpus solidū vna superfi-
A ij

cie contextum in cui⁹ medio est pūct⁹. a quo omēs linee
 ducte ad circūferentia³ sunt equales. et iste pūct⁹ dicit^r
 cētr⁹ spere Linea vō recta trāsiens p centrū spere appli-
 cās extremitates suas ad circūferētiā ex vtraq³ parte de
 axis. Duo vō puncta arē terminātia dicunt^r poli mōdi.



¶ Spera autē dupliciter diuidit^r sc^{ilicet} sūm subāz et sūm ac^{ut}
 eīdēns. ¶ Scđm subāz elus in speram nonā que pū-

mus motus siue primū mobile dicitur / et in spheram stel

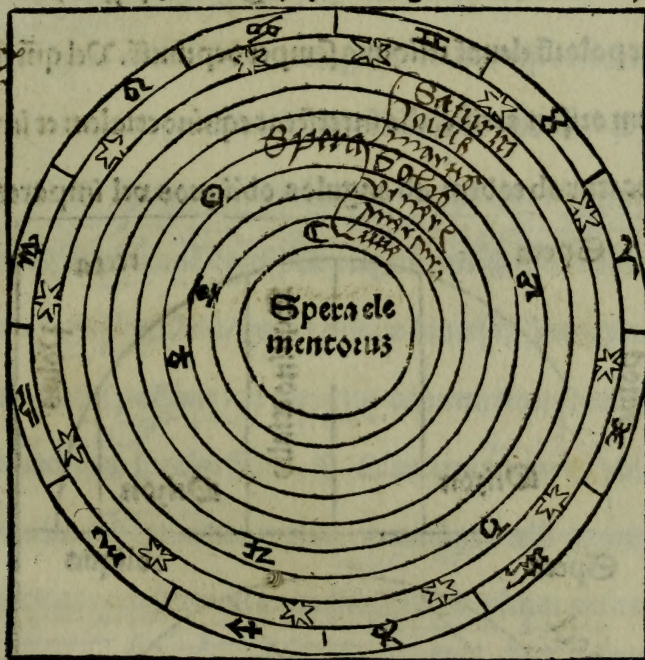
laz fixaz que firmamentū nuncupañ. et in septe3 speras

Septem planetarum quatuor quedam sunt maiores quedam minores

res fm q plus recedunt ⁊ accedunt a firmamēto. Vnde

inter illas speras / spera saturni est maxima / spera vero

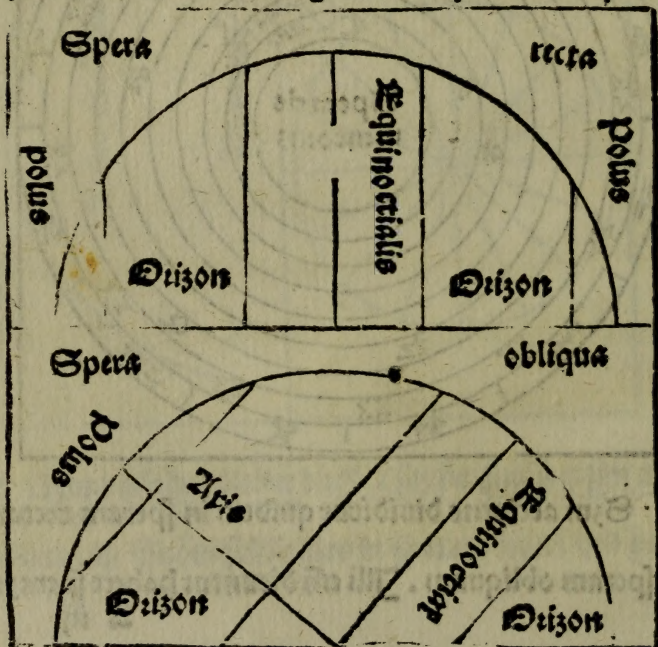
lune minima pro ut in sequenti figura continetur. *glo*



A pho 7 above 7
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Sum accidens dividitur quidem in speram rectam
et speram obliquam. Illi enim dicuntur habere speram re
ctam qui sunt in statu salutis. Illi vero qui sunt in statu
condemnationis habent speram obliquam. Illi autem qui
sunt in statu salutis habent speram rectam. Illi vero qui
sunt in statu condemnationis habent speram obliquam.

etiam qui manent sub equinoctiali si aliquis ibi mane-
 re possit. Et dicitur recta / quia neuter polorum ma-
 gis altero istorum eleuat vel qz eorum orizon interfecat equi-
 noctiale et interfecat ab eodem ad angulos rectos et spe-
 ciales Illi vo dicunt habere spera obliqua quicumqz ha-
 bitat intra equinoctiale vel ultra Illis em sup orizonte
 alter poloru eleuat reliquis semper depimit. Vel qm il-
 lorum orizon artificialis interfecat equinoctialem et in-
 tersecatur ab eodem ad angulos obliquos vel impares



totalis spara mundi

In duas p[ar]tes

Univerſalis autē mundi machina in duo dividit

in etheream ſcilicet et elementarem regionem

Elementaris quidez alteratōi cōtinue peruia exiſtēs

in quatuor dividit. Eſt em̄ terta tanq[ue] mundi centrum

in medio omnium ſita / circa quam aqua / circa aquaz

aer / circa aerem ignis . Eſt em̄ illic purus et non turbis

duo ignis orbem lune attingens ut ait ariſtotelis in li .

bio metheoror . Sic em̄ diſpoſuit ea de⁹ glorioſ et ſub-

limis . Et hec q̄tuor elemēta dicunt que viciffim a ſe

metipſis alterant cōrumpūt ⁊ regenerant ¶ Sūt em̄ elemē

ta corpa ſimplicia / que in partes diuerſaz formaz minū

me dividi poſſunt / ex quorum commixtione diuerſe go

neratorum ſpecies fiunt . ¶ Quorum trium quodlibet

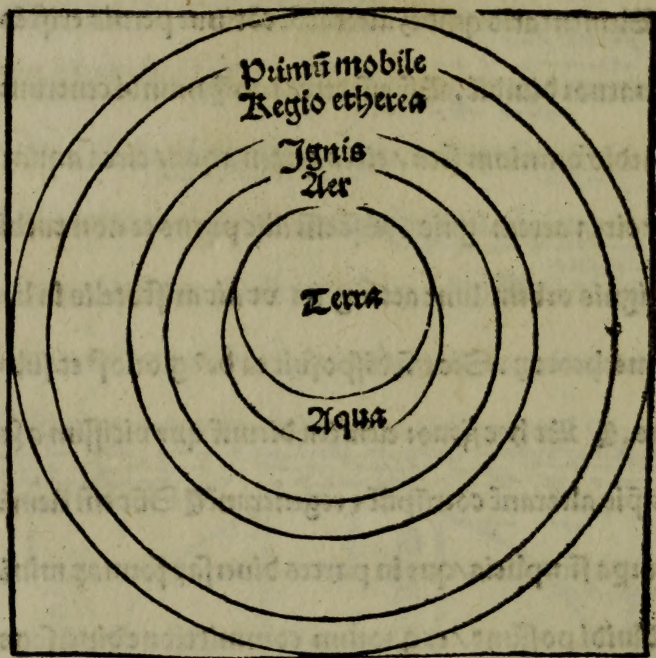
terram orbiculariter vndiq[ue] circundat / niſi quantum

ſiccitas terre humori aque ſubſiſtit ad vitam animan

tium tuendam . ¶ Omnia etiā p̄ter terram mobilia

exiſtunt / que ut centrū mundi pōderoſitate ſui magnū

extremum motum / vndiq equaliter fugiens / rotunde
 sperere medium possidet .



¶ Circa elementarem quidem regionem etherea regio

lucida a variatione omni sua immutabili essentia im-

munis existens / motu continuo circulariter incedit / et

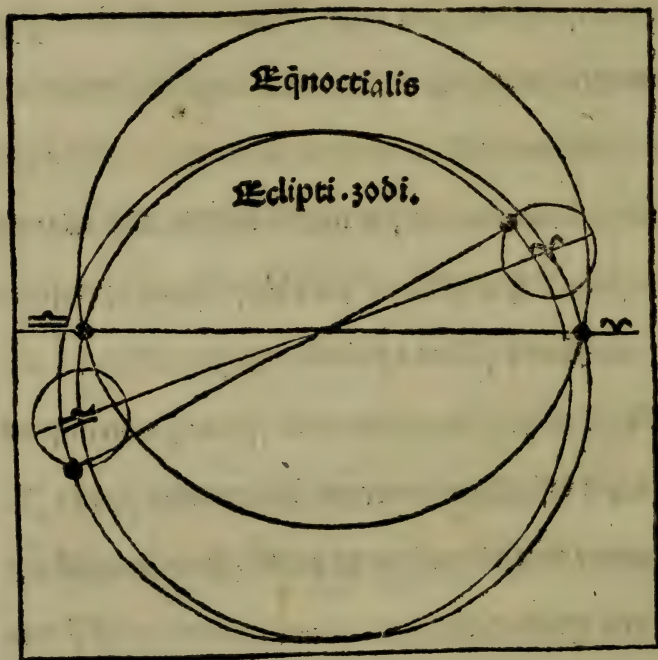
hec a philosophis quinta essentia nuncupat. Quinta

essentia est quicquid est a globo lunari vsq ad nona spe

Secundum Halandum In Almagest. 7. Almagest.

ram Cui⁹ novem sunt spere sicut pretactū est scz. lune
mercurij. veneris. solis. martis. iouis. saturni. stella
Spera 1^a 2^a 3^a 4^a 5^a 6^a 7^a 8^a 9^a 10^a 11^a 12^a 13^a 14^a 15^a 16^a 17^a 18^a 19^a 20^a 21^a 22^a 23^a 24^a 25^a 26^a 27^a 28^a 29^a 30^a 31^a 32^a 33^a 34^a 35^a 36^a 37^a 38^a 39^a 40^a 41^a 42^a 43^a 44^a 45^a 46^a 47^a 48^a 49^a 50^a 51^a 52^a 53^a 54^a 55^a 56^a 57^a 58^a 59^a 60^a 61^a 62^a 63^a 64^a 65^a 66^a 67^a 68^a 69^a 70^a 71^a 72^a 73^a 74^a 75^a 76^a 77^a 78^a 79^a 80^a 81^a 82^a 83^a 84^a 85^a 86^a 87^a 88^a 89^a 90^a 91^a 92^a 93^a 94^a 95^a 96^a 97^a 98^a 99^a 100^a 101^a 102^a 103^a 104^a 105^a 106^a 107^a 108^a 109^a 110^a 111^a 112^a 113^a 114^a 115^a 116^a 117^a 118^a 119^a 120^a 121^a 122^a 123^a 124^a 125^a 126^a 127^a 128^a 129^a 130^a 131^a 132^a 133^a 134^a 135^a 136^a 137^a 138^a 139^a 140^a 141^a 142^a 143^a 144^a 145^a 146^a 147^a 148^a 149^a 150^a 151^a 152^a 153^a 154^a 155^a 156^a 157^a 158^a 159^a 160^a 161^a 162^a 163^a 164^a 165^a 166^a 167^a 168^a 169^a 170^a 171^a 172^a 173^a 174^a 175^a 176^a 177^a 178^a 179^a 180^a 181^a 182^a 183^a 184^a 185^a 186^a 187^a 188^a 189^a 190^a 191^a 192^a 193^a 194^a 195^a 196^a 197^a 198^a 199^a 200^a 201^a 202^a 203^a 204^a 205^a 206^a 207^a 208^a 209^a 210^a 211^a 212^a 213^a 214^a 215^a 216^a 217^a 218^a 219^a 220^a 221^a 222^a 223^a 224^a 225^a 226^a 227^a 228^a 229^a 230^a 231^a 232^a 233^a 234^a 235^a 236^a 237^a 238^a 239^a 240^a 241^a 242^a 243^a 244^a 245^a 246^a 247^a 248^a 249^a 250^a 251^a 252^a 253^a 254^a 255^a 256^a 257^a 258^a 259^a 260^a 261^a 262^a 263^a 264^a 265^a 266^a 267^a 268^a 269^a 270^a 271^a 272^a 273^a 274^a 275^a 276^a 277^a 278^a 279^a 280^a 281^a 282^a 283^a 284^a 285^a 286^a 287^a 288^a 289^a 290^a 291^a 292^a 293^a 294^a 295^a 296^a 297^a 298^a 299^a 300^a 301^a 302^a 303^a 304^a 305^a 306^a 307^a 308^a 309^a 310^a 311^a 312^a 313^a 314^a 315^a 316^a 317^a 318^a 319^a 320^a 321^a 322^a 323^a 324^a 325^a 326^a 327^a 328^a 329^a 330^a 331^a 332^a 333^a 334^a 335^a 336^a 337^a 338^a 339^a 340^a 341^a 342^a 343^a 344^a 345^a 346^a 347^a 348^a 349^a 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tum fixarū . celi ultimi. Istarū aut sperarū quolibet su
perior inferiorem speram sperice circūdat. ¶ Quartū
sperarū quidē duo sunt mot⁹ . Unus est celi ultimi sup
duas extremitates axis / scz polum articū et antarticū
ab oriente per occidentem iterū rediens in orientē / quē
equinoctialis circulus per mediū dividit. Est etiaz ali
us inferlorū sperarū mot⁹ per obliquū huic oppositus
sup ares suos distātes a primis. 2 3. gradib⁹ et. 3 3. mi
natis. Sed primus omnes alias speras secum impetu
suo rapit infra diem et noctem circa terram semel. Il
lis tamen ptra nitentibus ut octava spera in centū an
nis vno gradu habet fieri / hunc siquidem motū secun
dum dividit per mediū zodiac⁹ Sub quo quilibet septē
planetarū speram habet propriam in qua defertur mo
tu proprio contra celi ultimi motū / et in diversis spa

cijſ temporum ipſam celum metitur . vt Saturnus in
 30. annis Jupiter in duodecim Mars in duobus Sol
 in 365. dieb⁹ et ſex horis . Venus et mercurius fere ſi-
 militer. Luna vero in viginſiſeptē dieb⁹ et octo horis .



¶ Quid aut celum voluat ab oriente in occidentē signū
 est huius Stelle que oriunt in oriēte ſemp eleuant pau-
 latim et ſucceſſive quſqz veniūt ī mediū celi et ſunt ſp in

eadē p pinq̄tate ⁊ remotiōe adinuicē et ita sp̄ se hñtes tē
dūt in occasuz p̄tinue et vniformiter. Est etiā aliud si-
gnū Stelle que sunt circa polū arcticū q̄ nunq̄ nobis oc-
cidūt / mouent̄ p̄tinue ⁊ vniformiter circa polam descri-
bendo circulos suos / et sunt semp in equali distācia ad-
inuicē et p̄pinq̄tate. Vñ p̄ istos duos mot⁹ p̄tinuos
stellaz fixarū / p̄tinue tam tendentiū ad occasuz q̄ nō tē-
dētuz. Patz q̄ firmamentū mouet̄ ab oriēte in occidētē

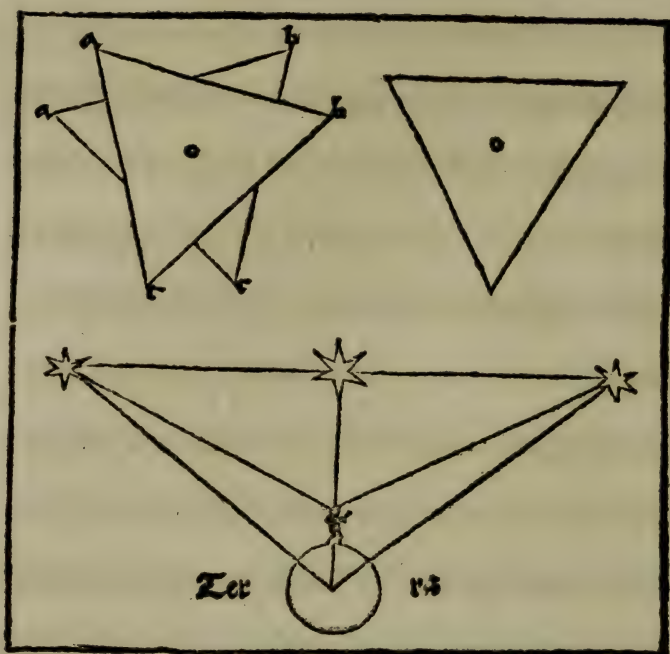


¶ Quid; autem celum sit rotundum triplex ratio / Prima est similitudo eo quod mundus sensibilis factus est ad similitudinem archetypi in quo non est principium neque finis. Unde ad huius similitudinem mundus sensibilis habet formam rotundam in qua non est assignare principium neque finem. Secunda comoditas quoniam omnium corporum yso perimetrorum sphaera maximus est / omnium etiam formarum rotunda capacissima est.

Quoniam igitur maximum et rotundum ideo capacissimum. Unde cum mundus omnia continet talis forma fuit ei utilis et comoda. Tertia ratio necessitatis / quia si mundus esset alterius forme quam rotunde scilicet trilatere vel quadrilatero vel multilatero sequeretur duo impossibilia scilicet quod aliquis locus esset vacuus et corpus sine loco / quorum utrumque est falsum Sicut patet in angulis elevatis et circumvolutis.

¶ Item sicut dicit Alfraganus. Si celum esset planum

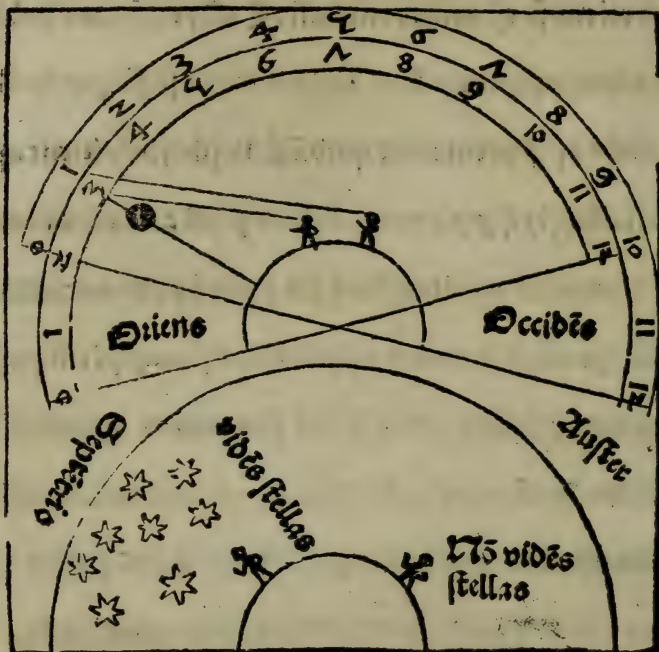
aliqua pars ei⁹ esset nobis propinquior / scilicet illa que
esset supra caput nostrū / ergo stella ibi existēs / esset no
bis propinquior q̃ stella in ortu suo vel occasu / sed que
nobis propinquiora sunt maiora vidētur / ergo sol vel
alia stella existens in medio celi maior deberet videri q̃
in ortu existens vel in occasu / cuius contrarium vide
mus contingere / maior enim apparet sol vel alia stel
la existens in oriente vel in occidēte q̃ in medio celi Sed
cum rei veritas ita non sit / huius apparentie causa est
q̃ in tempore hyemali vel pluuiali vapores quidā ascē
dunt inter aspectum nostrum et solem vel aliam stellā /
et cum illi vapores sint corpus dyaphonum disgregant
radios nostros visuales / ita q̃ non comprehendunt
rem in sua naturali et vera quantitate sicut patet de de
nario proiecto in fundum aque limpide qui propter si
milem disgregationem radiorum apparet maior q̃ sua
vera quantitas.



¶ Q; terra etiā sit rotāda patet sic / signa ⁊ stelle nō eā
liter oriuntur et occidunt omnibus hominibus ubiq; ex
istentib⁹. Sed prius oriuntur et occidūt illis qui sunt
⁊sus orientem / q̄ aut̄ cicius et tardius oriunt̄ et occi-
dunt quibusdā. causa est tumor terre quod bene patet
per ea que fiunt in sublimi / vna em̄ et eadeꝫ ecclipsis lu-
ne numero in prima hora noctis que apparet nobis oc-

elidētalib⁹ appet oriētalib⁹ circa horā noctis tertiā. Vñ
 pstat q illis pri⁹ fuit nor ⁊ sol pri⁹ eis occidit q̄ nob̄ cu
 ius rei causa est tumor terre tñ. ¶ Q; etiā terra habe
 at tūorē a septentrīde in austr⁹ et ecōverso sic p̄z/hoīb⁹
 exītib⁹ vñ septentrionē quedā stelle sūt sempiternē ap
 paritiōis scz q̄ p̄p̄que accedūt ad polū arcticū/alie autē
 sūt sempitēne occultatiōis q̄ sūt p̄p̄nq̄ polo antartico.
 Si ergo aliq̄s pcederet a septētrīde vñ austr⁹ i tñ possz
 pcedere q̄ stelle q̄ pri⁹ erāt sibi sempiternē apparitiōis
 iā tēderēt ei i occasuz. Et q̄ro maḡ accederet ad austr⁹
 tāto pl⁹ mouerent̄ in occasuz. ille itēz idē hō posset vi
 dere stellas q̄ fuerūt pri⁹ sibi sempiternē occultatiōis/ ⁊
 ecōverso p̄tgeret alicui pcedēti ab austro vñ septētrīdē
 hui⁹ autē rei causa est tñ tūor terre. Itē si terra esset pla
 na ab oriēte in occidētem tūc tā cito oriēnt̄ stelle occidē
 talib⁹ q̄ orientalib⁹ qd̄ p̄z esse falsuz. Si scdo terra essz
 plana a septētrīde i austr⁹ ⁊ ecōverso / stelle q̄ essēt alicui

Tempiterne appicōis sp̄ apperēt ei q̄cūq; pcederet qđ ē
 falsū s̄ q; plana sit p̄nimia ei? q̄titate visui hoīm appet



¶ Q; aut aqua habeat tūorez et accedat ad rotūditatē
 sic p̄tz. Ponat signū in litore maris et eruat navis a por-
 tui in tū elōget q; ocul? exis iuxta pedē mali nō posset
 videre signū / stante vero navi oculus eiusdē existētis
 in summite mali bñ videbit signū illud / s; ocul? existē

tis iuxta pedē mali meli⁹ deberet videre signū qđ qui est
 in sūmitate mali / sicut p̄z p̄ lineas ductas ab veroq;
 ad signū / & nulla alia hui⁹ rei causa est qđ tumor aq;. Ex
 cludant̄ em̄ oīa alia īpedimēta sic nebule & vapores ascē
 dentes Itē cū aq; sit corp⁹ hōgeneū totū cū p̄tib⁹ ē eiusdē
 vōnis / s; p̄tes aq; sūt sic i gutte & roib⁹ herbarū appet ro
 tūdā naturalit̄ appetūt formā ergo & totū c⁹ sūt p̄tes.

In linea a finem
 li ad signum in li
 p̄z p̄z p̄z p̄z p̄z
 p̄z p̄z p̄z p̄z p̄z
 p̄z p̄z p̄z p̄z p̄z
 p̄z p̄z p̄z p̄z p̄z
 p̄z p̄z p̄z p̄z p̄z

X ha m̄ p̄z p̄z
 p̄z p̄z p̄z p̄z p̄z
 p̄z p̄z p̄z p̄z p̄z
 p̄z p̄z p̄z p̄z p̄z
 p̄z p̄z p̄z p̄z p̄z



¶ 2; aut terra sit in medio firmamenti sita. sic patet
existentibus in superficie terre stelle apparent eiusdem
quantitatis siue sint in medio celi siue iuxta ortum siue
iuxta occasum. Et hoc est ideo quia equaliter terra dis
stat ab eis. Si enim terra magis accederet ad firmamen
tum in vna parte q̄ in alia / sequeretur q^o aliquis existēs
in illa parte superficies terre celi q̄ magis accederet ad fir
mamentum non videret celi medietatem. Sed hoc est
cōtra Ptolomeum et omnes philosophos dicentes / q^o
ubicumq^o existat homo / sex signa ei oriuntur et sex occi
dūt et medietas celi ei semp apparet medietas vero alia
occultat. Illud idem est signum q^o terra est tanq̄ cent^o
et punctus respectu firmamenti. Qm̄ si terra esset ali
cuius quantitatē respectu firmamenti / non continge
ret medietatem celi videre. Item intelligatur su
perficies plana super centrum diuidēs eam in duo equa
lia et per psequens ipsum firmamentum ocul^o igit^o ep̄s

In terre cetero . videret medietatem celi et ibi etiam in sup
 facie terre videret eandem medietatem. Ex his colligitur
 q' insensibilis est quantitas terre que est a superficie ad
 centrū et per consequens quātitas toti⁹ terre insensibi
 lis est respectu firmamenti. Dicit etiam Alfragan⁹ q' mi
 nima stellarum fixarum visu notabiliz maior est q' to
 ta terra . Sed ipsa stella respectu totius firmamenti est
 sicut punctus et centrum. multo igitur fortius terra est
 punctus respectu firmamenti cum sit minor ea .

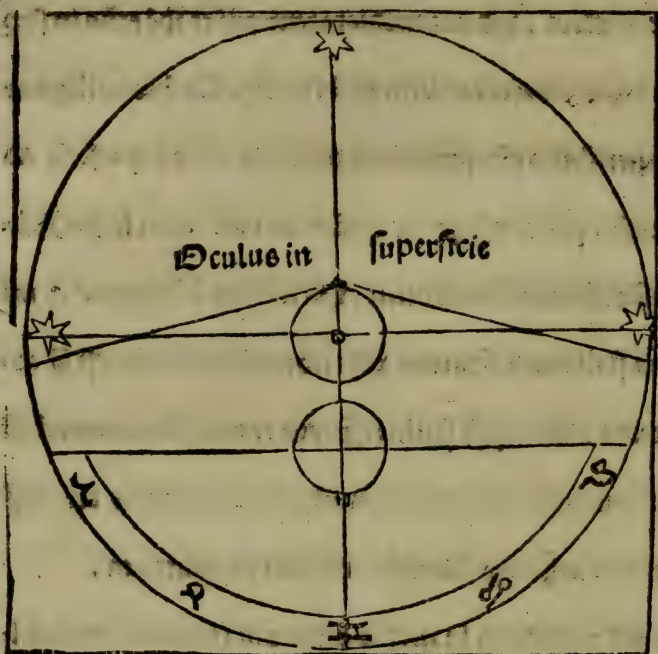
¶ Sed aut terra in medio omnium teneatur immobili
 liter / quia cum sit summe gravis sic persuaderi videtur
 eius gravitas / omne em grave naturaliter cedit ad cen
 trū . Centz est quasi pñctus in medio firmamēti / terre
 igitur cum sit summe gravis ad punctum illum natura
 liter tendit . ¶ Item quicquid mouet a medio versus
 circumferentiam ascendit / sed terra a medio mouetur
 igitur ascendit quod pro impossibili relinquitur .

placet per dicitur

*Nota in pñctum
dicitur . Alfragan⁹
vult et insensibiliz
minimū ipso pñctū*

*Verba immobilitatis
dicitur fortis .*

Alia ratio



ambitum terre auctoritate am-
biostij. **T**otius autem orbis terre ambitus auctoritate am-
 biosij. Theodosij. Macrobij et Eusebii philoso-
 phorum. 152000. stadia perire diffinit unicuique quide
 360. partium zodiaci. 700. stadia deputando. Sum-
 pro omni astrolabio vel quadrantis substellate noctis cla-
 ritate per totam medicinam foramen polo prospecto no-
 teretur graduum multitudo in quo steterit medicinium. De

^{intra} inde procedat cosmimetra directe versus serēptionē a
^{plaga} meridie donec in alteri⁹ noctis claritate viso ut pri⁹ po
^{plaga} lo steterit alic⁹ vno gradu medietatis. Post hoc mensu
^{et restantia} reū itineris spaciū et inuenient. 700. stadia. Deinde da
^{per duplicatū} tis unicuiq³ 360. gradus tot stadijs terreni orbis am
^{magis} bit⁹ inuē⁹ erit. ¶ Ex his aut iuxta circuli ⁊ dyametri
^{maioris} regulā Dyameter terre sic inueniri poterit / aufex vige
^{et restantia} simā secundam partem de circuitu terre / et remanētis
^{magis} tertia pars hoc est. 80181. et semis ⁊ tertia pars vnius
^{et restantia} stadij erit terreni orbis dyameter siue spissitudo terre.

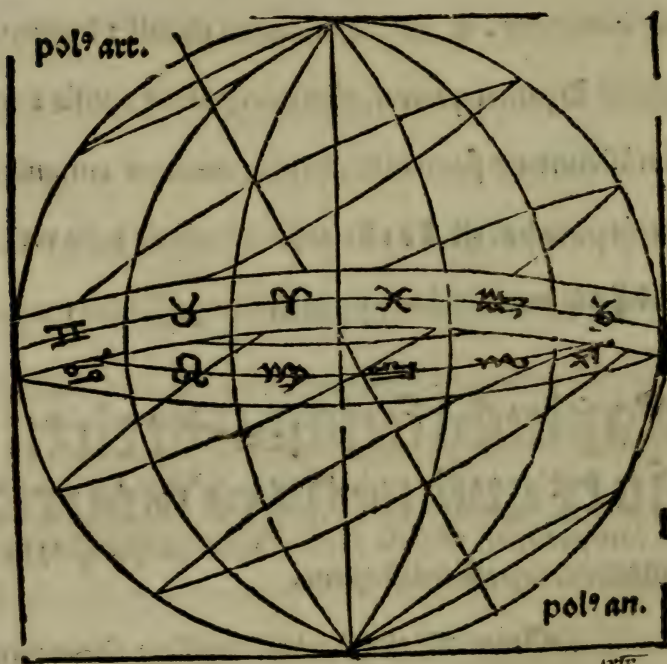
Quidā dīcunt qd
 7 ipse orbis 69
 mīlīa dīcunt qd
 70000.

**Capitulū secundū de circu
 lis ex quibus spera materia
 lis componitur. Et illa supercelestis que per istas ima
 ginatur componi intelligitur.**

Dum aut circuloꝝ ex quibus spera com
 ponitur quidam sunt maiores. quidam mi
 nores. ut sensui patet. Maior em̄ circulus in spera dī.

In hoc capitulo
 de dīcunt qd
 7 ipse orbis 69
 mīlīa dīcunt qd
 70000.

Figura *De Similitudine*
 cuius qui descriptus in superficie spere super ei⁹ cētrum.
 diuidit speraz in duo equalia. Minor *ho* qui descript⁹
 in superficie spere eam non diuidit in duo equalia / sed
 in portiones inaequales. Inter circulos vero maiores.
 primo dicendum est de equinoctiali.



*est circulus equinoctialis
 qui in quibuslibet suis partibus
 diuidit.*

¶ Est igit^r equinoctialis circulus quidā diuidēs speraz in
 duo equalia sūt quālibet sui p^{ar}te eque distā^s ab utroq^{ue} po
polo

lo. Et dicit equinoctialis. qm̄ quādo sol trāsit p̄ illū. qd̄
 est bis in anno / in principio arctis scz in principio li
 bre / est equinoctiū in vniuersa terra. Vñ etiā appellat̄
 equator: dici et noctis q̄ adequat diē artificiales noctis
 Et dicit cingul⁹ primi mot⁹. Vñ sciēdū q̄ prim⁹ mot⁹
 dicit mot⁹ primi mobilis. hoc ē none sperē. siue celi vltimi
 qui est ab oriente p̄ occidentē / rediēs itē in orientem
 qui etiā dicit mot⁹ rationalis / ad similitudinem
 mot⁹ rōnis qui est in microcosmo id est in homine. scz
 quando fit p̄sideratio a creatore per creaturas in creato
 rē ibi sistendo. Secundus mot⁹ firmamenti et plane
 tarū contrari⁹ huic est ab occidentē per orientem iterum
 rediens in occidentem. qui mot⁹ dicit irrationalis siue
 sensualis. ad similitudinez mot⁹ microcosmi. qui est a
 corruptibilib⁹ ad creatorem iterum rediens ad corrupti
 bilia. Dicit ergo cingulus primi mot⁹ / quia cingit siue
 diuidit primū mobile. scilicet sperā nonā in duo equa

et ad mōtū
 p̄ter q̄lōs p̄ mōtū
 mōtū in p̄mōtū
 q̄ p̄mōtū in p̄mōtū
 p̄mōtū in p̄mōtū

De Vasa Maiores 2 m. Astronomos habet signum una
Luna. Quod minus primarius est qd. Astronomos videtur
16 septem dies septuaginta dies.

Orbita duplex est. Una est
una qd. incompuncta per se.

Ita nunc

lia eque distans a polis mundi. Vnde notandum qd poli
mundi qui nobis semper apparet. dicitur polus septentrio
nalis. arcticus vel borealis Septentrionalis dicitur a sep
tentrione / hoc est a maiori visa. qui dicitur a septem et tri
on quod est bos. quia septem stelle que sunt in visa tarde
mouentur ad modum bouis. cum sint propinque polo. Vel
dicuntur ille septem stelle septentriones. quasi septentridones
eo qd terunt partes circa polum. Arcticus quidem dicitur
ab arctos quod est maior visa. Est enim iuxta maiorem ve
sam Borealis vero dicitur qui est in illa parte a qua venit
boreas. Polus vero oppositus dicitur antarticus. quasi
contra arcticum positus. dicitur et meridionalis quia ex
parte meridiei est / dicitur etiam australis. quia est in illa
parte a qua venit auster. Ista igitur duo puncta in firma
mento stabilia. dicuntur poli mundi / quia spera arces ter
minant. et ad illos voluitur mundus. quorum unus sem
per nobis apparet / reliquus vero semper occultatur. Vnde Vir

Admonet de polo
antartico signum qd. in
se apparente 20 qd. in
se apparente 20 qd. in

Admonet de polo
antartico signum qd. in
se apparente 20 qd. in
se apparente 20 qd. in

Admonet de polo
antartico signum qd. in
se apparente 20 qd. in
se apparente 20 qd. in

Admonet de polo
antartico signum qd. in
se apparente 20 qd. in
se apparente 20 qd. in

¶ Est ali⁹ circulus in sphaera qui intersecat equinoctialem
et intersecat ab eodem in duas ptes equales. et una eius
medietas declinat versus septentrionē. alia versus austr
Et dicit^r iste circulus zodiac⁹ a zoe qd est vita. quia s^m
motum planetarū sub illo est omnis vita in rebus in se
rioribus. Vel dicit^r a zodion quod est animal. qz cu³ di
vidat^r in .i. z. partes equales. quilibet pars appellat^r si
gnum. et nomen habet speciale a nomine alicui⁹ aīalis
propter pprietates aliquam convenientem tam ipsi q̃
animali vel ppter dispositiōes stellarū fixarū in illis
partibus ad modū huiusmodi animalū. Iste vero cir
cul⁹ latine dicit^r signifer / qz fert signa / vel quia dividit^r
in ea. Ab aristotile vō in libro de generatōe et corrupti
one dicit^r circulus obliquus. vbi dicit q^d s^m accessum et
recessum solis in circulo obliquo sunt generatiōes et cor

ruptiones in reb⁹ inferiorib⁹. ¶ Nomia aut^{em} signorū
ordinatio et numerus in his patet v^{is}ib⁹ . Sunt aries
taurus gemini cancer leo v^{ir}go. Libraq^{ue} scorpi⁹ archite
nens caper amphora pisces. Quodlibet autem signus
diuidit^{ur} in .30. gradus. Vnde patet q^{uod} in toto zodiaco
sunt. 360 grad⁹ Sim aut^{em} astronomos iterum quilibet
gradus diuidit^{ur} in . 60 . minuta . quodlibet minutū in
60. secunda. quolibet secundū in . 60. tertia . et sic de
inceps vsq^{ue} ad . 10. Et sicut diuidit^{ur} zodiacus ab astro
nomo . ita et quilibet circul⁹ in spha^{era} siue maior siue mi
nor in partes consimiles . Cum omnis etiam circulus
in spha^{era} preter zodiacum intelligatur sicut linea vel cir
cumferentia . solus zodiacus intelligitur vt superficies
habēs in latitudine sua duodecim gradus . de cuiusmo
di gradib⁹ iam locuti sum⁹. Vñ patet q^{uod} quidam men
ciuntur in astrologia dicētes signa esse quadriata . nisi ab
utentes nomine idem appellent quadriatū et quadram

^{signum}
gulu. Signū em̄ habet grad⁹. 30. in longitudine. 12.

^{vero in latitudine.}
vero in latitudine. ¶ Linea autē diuidens zodiacum in

^{circuitu ita qd ex vna parte sui relinquat sex grad⁹. et ex}
circuitu ita qd ex vna parte sui relinquat sex grad⁹. et ex

^{illa pte alios sex. dicitur linea ecliptica. quoniam quan-}
illa pte alios sex. dicitur linea ecliptica. quoniam quan-

^{do sol et luna sunt linealiter sub illa / ptingit eclipsis so-}
do sol et luna sunt linealiter sub illa / ptingit eclipsis so-

^{lis aut lune. Solis. vt si fiat nouilunium et luna inter}
lis aut lune. Solis. vt si fiat nouilunium et luna inter

^{ponatur recte inter aspect⁹ nostros et corp⁹ solare. Lu-}
ponatur recte inter aspect⁹ nostros et corp⁹ solare. Lu-

^{ne. vt in plenilunio / quādo sol lune opponitur dyame-}
ne. vt in plenilunio / quādo sol lune opponitur dyame-

^{traliter. Vñ eclipsis lune nihil aliud est qm̄ interpositio}
traliter. Vñ eclipsis lune nihil aliud est qm̄ interpositio

^{terre inter corpus solis et lune Sol quidē semp decur-}
terre inter corpus solis et lune Sol quidē semp decur-

^{rit sub ecliptica omnes alij planete declinant vel versus}
rit sub ecliptica omnes alij planete declinant vel versus

^{septentrionem vel versus austrum. quandoq; autē sunt}
septentrionem vel versus austrum. quandoq; autē sunt

^{sub ecliptica. Pars vñ zodiaci que declinat ab equino-}
sub ecliptica. Pars vñ zodiaci que declinat ab equino-

^{ctiali versus septentrionē dicitur septentrionalis. vel bo-}
ctiali versus septentrionē dicitur septentrionalis. vel bo-

^{realis. vñ arctica Et illa sex signa q̄ sūt a p̄cipio arietel}
realis. vñ arctica Et illa sex signa q̄ sūt a p̄cipio arietel

^{vsq; in finē v̄ginis. dicūt signa septentrionalia vel bore-}
vsq; in finē v̄ginis. dicūt signa septentrionalia vel bore-

^{alia. Alia ps zodiaci q̄ declinat ab eq̄noctiali v̄s meri-}
alia. Alia ps zodiaci q̄ declinat ab eq̄noctiali v̄s meri-

diem dicit meridionalis . vel australis . vel antarctica .

Et sex signa que sunt a principio libre vsq; in finē pisci

un dicunt meridionalia vel australia . ¶ Cum autē

dicitur q; in ariete est sol . vel in alio signo . Sciendū q;

hec prepositio in sumitur p sub . s; n; q; nunc accipim;

signum . In alia autē significatiōe dicit signū pyramis

quadrilatera . cui; basis est illa superficies quā appella-

mus signum . vertex vero eius est in cōtro terre . Et s; n;

hoc ppote loquēdo possum; dicere planetas esse in sig-

nis Tertio mō dicit signū vt intelligant sex circuli tran-

seuntēs sup polos zodiaci . et per principia . 12 . signorū

Illi sex circuli diuidūt totam supficiēz spere in . 12 . par-

tes latas in medio . arctiores vō iuxta polos zodiaci . et

quelibet pars talis dicitur signū . et nomen habet speci-

ale a noīe illius signi . quod intercipiūt inter suas duas

lineas . Et s; n; hanc acceptionē stelle que sunt iuxta po-

los dicunt esse in signis . ¶ Item intelligatur corpus

^{Sumerus}
 noctia. Dicū aut colurus a colon grece quod est mēbr̃
^{figura} et vros quod est bos siluester, quia quādamodum cau-
^{cauda} da bouis siluestris erecta. que est eius membrum facie
^{ell. inty} semicirculum et non perfectum. ita colurus semper ap-
^{fig. usum} paret nobis imperfectus quoniam solum vna eius me-
^{colurus} dietas apparet. alia vero nobis occultatur. Colurus
 igitur distinguens solsticia transit p polos mundi. per
^{polos} polos zodiaci. et maxim. 23 solis declinatōes hoc est per
^{obliquū figurat} primos gradus cancri et capricorni. Vnde primus pū-
^{gradus} ctus cancri vbi colurus iste interfecat zodiacum dicitur
 punctus solsticij estiuales. quia quando sol est in eo / est
^{ad hanc} solsticium estiuale. et non potest sol magis accedens ad
 zenith capitis nostri. Est autem zenith punctus in fir-
^{prodestitutus} mamento directe sup: apōsitus capitib⁹ nostris. Arc⁹
 vero coluri qui intercipitur inter punctum solsticij estiu-
^{p. m. m. d.} ualis et equinoctialem / appellatur maxima solis decli-
^{hinc. figurat. q. d. m.} natio. Et est sūm Ptolomeū. 23. graduū 251. min⁹.

^{219 1877}
 totū. Szm Almeonem vero .23. graduū et .33. minu
 totū Similiter prim^{us} pūct^{us} capricorni. vbi idem colu
 rus ex alia parte interfecat zodiacum. dicit^r punctus sol
 stici^{us} hyemalis. et arcus coluri intercept^{us} inter punctis
 illū r equinoctialem dicit^r alia maxima solis declinatio
 et est equalis puon. Alter quidē colurus trāsit p polos
 mundi et per prima pūcta arietis et libie. vbi sunt duo
 equinoctia. vnde appellatur colur^{us} distinguēs equino
 ctia. Isti aut^{em} duo coluri interfecāt sese sup polos mūdi
 ad angulos rectos sperales. Signa quidem solsticioz
 et equinoctioz patent his versib^{us}. Hec duo solsticia fa
 ciūt cācer cap^{us} corn^{us} S3 noctes equāt aries r libra dieb^{us}
 ¶ Sunt iterū duo ali^j circuli maiores in spera. scz me
 ridianos et honzon. Est aut^{em} meridianus circulus qui
 dam trāsiens per polos mūdi et p zenith capitis nostra
 Et dicitur meridianus. quia vbi cunq^{ue} sit homo / et in
 quocunq^{ue} tempore anni quando sol motu firmamenti

peruenit ad suū meridianum est illi merities . Cōsimi
li ratione dicitur circulus medij diei . ¶ Et notandū qd ci-
uitates quarū vna magis accedit ad orientes q̄ alia ha-
bēt diuersos meridianos Arc⁹ vero equinoctialis inter
ceptus inter duos meridianos dicitur lōgitudō ciuitatū.
Si autē due ciuitates eundem habeant meridianū / tūc
equakter distāt ab oriēte et occidēte. ¶ Horizon vō est
circulus diuidens inferius hemisperij a superiori . vnde
appellatur horizon . id est terminator visus . Dicitur etiā
horizon circulus hemisperij / eadez de causa . Est autē du-
plex horizon . rect⁹ et obliquus siue declinans Rectū hori-
zontē et sperā rectā habēt illi quoz zenith est in equino-
ctiali / quia illoz horizon est circulus transiēs per polos
mūdi diuidēs equinoctialē ad angulos rectos sperales
Vnde dicitur horizon rectus . et spera recta . Obliquū
horizontem siue declinem habent illi quib⁹ polus mūdi
eleuatur supra horizontē / quoniam illoz horizon inter

^{circulo}
secat equinoctiale ad angulos impares et obliquos / vñ

de dicir horizon obliquus / et spera obliqua siue decli-

^{all. quibz}
^{est}
nis .zenit aut capitis nostri semper est poli⁹ horizōtis .

^{est}
^{est}
¶ Vñ ex his patet q̄ quāta est eleuatio poli mōdi sup̄a

horizontē / tāta est distācia zenith ab equinoctiali / qđ

sic patz . Cū in quolibet die naturali vterqz colurus bis

iungat meridiano / siue idē sit qđ meridian⁹ / quicquid

de vno probatur et de reliquo . Sumatur igit̄ quarta

pars coluri distinguētis solstitia que est ab equinoctia

li vsqz ad poliū mundi . Sumat̄ iterū quarta ps eiusdez

coluri . que est a zenith vsqz ad horizontē / cū zenith sit

polus horizōtis . Iste due quarte cū sint quarte eiusdez

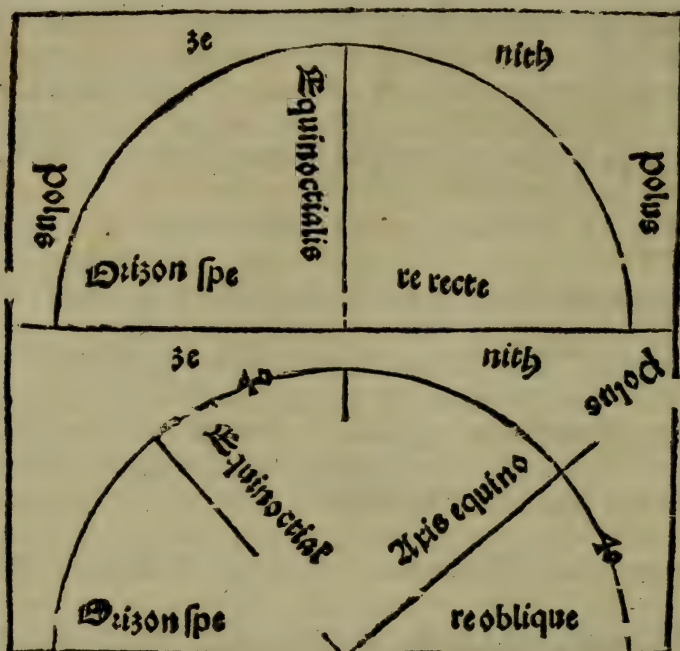
circuli / inter se sunt equales . Sed si ab equalib⁹ equa-

lia demant̄ vel idem cōmune / residua erūt equalia . dē

pto igit̄ cōmunis arcu / scilicet qui est inter zenith et po-

lum mōdi / residua erūt equalia / scz eleuatio poli mundi

sup̄a horizontem et distācia a zenith ab equinoctiali .



¶ Dicto de sex circulis maioribus dicendū est de quatuor minoribus. Notandū igitur q̄ sol existens in primo puncto cācri. siue in pūcto solsticij estivalis / raptu firmamēti describit quendam circulū. qui ultimo descriptus est a sole ex parte poli arctici. Vnde appellat̄ circulus solsticij estivalis ratione superi⁹ dicta / vel tropicus estivalis a tropos quod est puerſio. quia tunc sol

Incipit se puertere ad inferi⁹ hemispheriū et recedere a nobis. Sol iterū existens in primo puncto capricorni siue solsticiū hyemalis. raptō firmamenti describit quendam circulū qui ultimo describitur a sole ex parte poli antarctici. vnde appellat^r circul⁹ solsticiū hyemalis. siue tropicus hyemalis. quia tūc sol pueritur ad nos. ¶ Cū autē zodiacus declinet ab equinoctiali. et polus zodiaci declinabit a polo mūdi Cum igit^r moueat^r octaua spera et zodiacus qui est p^r octaua spera mouebit^r circa apem mundi. et polus zodiaci mouebitur circa polum mūdi. Iste igitur circul⁹ quem describit pol⁹ zodiaci circa polum mundi arcticum dicit^r circulus arcticus. Ille vero circul⁹ quem describit alter polus zodiaci circa poliū mundi antarcticum dicitur circulus antarticus.

¶ Quanta est etiam maxima solis declinatio. scz ab equinoctiali. tanta est distantia poli mundi ad poliū zodiaci. quod sic patet Sumatur colur⁹ distinguēs solstī

S. m. l. y. l. u. s. p. r. a. m. s. p. d. e.
 p. o. r. t. a. l. i. n. d. i. c. l. a. t. u. s.
 q. u. a. n. t. u. m. c. o. l. u. m. n. i. s. q. u. a. n. t. u. m. i. n.
 i. c. a. p. i. t. u. s. p. e. n. i. t. u. s. c. o. r. p. u. s.
 u. s. q. u. a. n. t. u. m. i. n. d. i. c. l. a. t. u. s. m. a. g. n. i.
 t. u. d. i. n. e. d. i. c. l. a. t. u. s.

Añt circulus arctic⁹ fm quālibet sui partem eque distet

a polo mundi. patet q̄ illa pars coluri ^{poli mundi} que est inter pri-
mum punctū cancri ⁊ circulū arcticūz fere est dupla ad
maximāz solis declinationē. siue ad arcū eius ^{et coluri} scilicet coluri
qui intercipitur inter circulūz arcticū et polum mundi
arcticum. qui etiā arcus equalis est maxime solis decli-
nationi. Cū enī colurus iste sicut alij circuli in sphaera sit
360. graduū. quarta eius erit. 90. graduū. Cū igitur
maxima solis declinatio sūm Ptolomeū sit. 23. graduū

et . 51 . minutoꝝ . et totidez graduū sit arc⁹ qui est inter

circulum arcticū et polum mundi arcticum . si ista duo

simul iuncta . que fere faciūt . 48 . gradus subtrahant

a . 90 . residuū erunt . 42 . gradus . quant⁹ est arc⁹ colu

ri q̄ est inter primū p̄ictū cātri et circulū arcticū Et sic

ptz q̄ ille arc⁹ fere dupl⁹ est ad maximā solis declinatōez

¶ Notandū q̄ equinoctialis cū quatuor circulis mi

norib⁹ dicunt quinq; paralleli quasi equidistantes . non

quia quantū primus distat a secundo . tantū secundus

distet a tertio / q̄ hoc falsum est sicut iaz patuit sed qui

libet duo circuli simul iuncti s̄m quālibet sui ptem eque

distāt ab inuicē et dicunt paralleli equinoctialis . pa

ralell⁹ solstici⁹ estivalis . parallell⁹ solstici⁹ hyemalis . pa

ralellus arcticus et parallell⁹ antarctic⁹ . **¶** Notandū

etiā q̄ quatuor paralleli miores scz duo tropici et para

lellus arctic⁹ et parallellus antarctic⁹ distinguunt in ces

lo quinq; zonas siue regiones . Vnde Virgilius in geor

bi^o pri^o methamorphoseor. Totidēq; plage tellure pre
munt in orbem. Quarum q̄ media est nō est habitabil
estu. Vir tegit alta duas, totidē inter utraq; locavit.

Temperieq; debet mixta esse frigore flāma. ¶ Illa igit
^{plaga} zona q̄ est inter duos tropicos dicit̄ inhabitabilis ppter
^{calore} calore solis discurrētis sp̄ inter tropicos. Similiter ^{plaga} zona
^{terre} terre illi directe supposita dicit̄ inhabitabilis ppter ca
^{solis} solis discurrētis sup̄ illā. Ille vō due zone que cir
^{circuli} cūscribuntur a circulo arctico ⁊ circulo antarctico circa
^{polos} polos m̄di / inhabitabiles sūt ppter nimiam frigiditatem /
^{q̄} q̄ sol ab eis marie remouet̄. Similiter intelligēdum est de
^{plagis} plagis terre illis directe suppositis Ille aut̄ due zone q̄e

plagis terre illis directe suppositæ Ille autē due zone q̄q̄
 una ē iter tropicū estivalē ⁊ circulū arcticū ⁊ reliq̄ q̄ ē
 iter tropicū hyemalē ⁊ circulū antarcticū. hīc abiles sunt

ad hunc p[ar]tem
et t[em]p[er]e caliditate corride zone ex[tr]in[se]cis inter tropicos. et
et p[ar]tem d[ic]it
frigiditate zonarū extremarū que sunt circa polos mū[di]
et p[ar]tem d[ic]it
di Idem intellige de plagis terre illis directe supposit



Capitulum tertium de ortu et casu signorum de diversitate dierum et nocturnum et de diversitate climatum.

Idem
Ignor aut ortus et occasus dupliciter accipit.

Idem
quoniam quantum ad poetas et quantum ad
astronomos. Est igitur ortus et occasus signorum quo

Idem
D. ij

*De ortu et occasu
signorum
Idem*

ad poetas triplex scilicet cosmicus. chronologicus et eliacus. Cosmicus enim ⁷²⁸ seu mundanus est quando signum vel stella supra horizontem ex parte orientis de die ascendit Et licet in qualibet die artificiali sex signa sic orientantur. tamen astronomice signum illud dicitur cosmice orientari cum quo et in quo sol mane orientatur Et hic ortus proprius et principalis et quotidianus dicitur. De hoc ortu exemplum in geographicis habetur ubi docetur sacio fabarum et militum in vero sole existente in thauris. sic. Candidus auratus aperit eum comibus annis Thaurus et aduerso cedens canis occidit astro. Occasus vero cosmicus est respectu oppositis.

scilicet quando sol orientatur cum aliquo signo cuius signum oppositum occidit cosmice De hoc occasu dicitur in geographicis ubi docetur sacio frumenti in fine autumnii sole existente in scorpiione qui cum orientatur cum sole / thaurus signum eius oppositum ubi sunt pleiades occidit. sic. An tibi eoe atlanti

des abscondant Debita. quam sulcis committas semina.

Des abscondant Debita. quam sulcis committas semina. Des abscondant Debita. quam sulcis committas semina.

Chronic⁹ ort⁹ siue tpalis est qñ signū vel stella p⁹ so
 lis occasus supia horizontē ex pte oriēt^{is} emergit chroni
 ce. scz d nocte. ⁊ d: t⁹pal q: temp⁹ mathēaticor⁹ nascit cū
 solis occasu. De hoc ortu habē⁹ in Quidio de pōto. vbi
 p⁹qrit morā exiliū sui dicēs. Cū sum⁹ in pōto cū frigore
 cūq⁹ sagittis. Quatuor autūnos pleias orta facit. Si
 gnificās p⁹ qtuor autūnos qtuor annos trāsūisse postq̃
 miss⁹ erat in exiliū. Sz vgilī⁹ voluit in autūno pleiades
 occidere. ergo p⁹trarij vidēt. Sz rō hui⁹ est q⁹ sūm vgilīū
 occidūt cosmice. Szūm Quidiū oriunt⁹ chronice. qd bñ
 pōt ptingere eodē die. Sz dūnter tñ. q: cosmicus occas⁹
 est respectu t⁹pis matutini. Chronic⁹ vero ort⁹ respectu
 vesperini est Ch⁹dic⁹ occas⁹ est respectu oppositiōis Vñ
 lucan⁹ sic iqt Tūc nox tessalicas vigeat pua sagittas.

¶ Eliac⁹ ort⁹ siue solaris est quādo signū vel stella ris-
deri potest p elongationē solis ab illo. quod prius vide-
ti non poterat solis p pinq̄uitate. Exemplū huius po-
D ii

[Faint handwritten notes at the bottom of the page]

2000

• 761.2

1726 granted
1727 confirmed

recovered

1226 *gamb.*
1227 *cond.*

120 f. 200. 97. 2. 1. 1. 1.

120 f. 200. 97. 2. 1. 1. 1.

94 - lungo

94 - lungo

very fine

Et in loca ubi b[e]n[e]dicti
 R. — ad con[m]m[un]i[on]em

del occasus alicui
in 2000 2000

judicio

20. 10. 1890 /
S. 10

208

Altezo fig
sub idra
huc et compendium

15m 5d

libro

pars equinoctialis oritur. oblique vero cum quo minor

libro

Similiter etiā intelligendū est de occasu. Et est sci

*Quidam quod
omnes signa
zodiaci & ag
nates in
libro*

Edi q in spera recta quatuor quarte zodiaci inchoate a

4 punctis

Cancri & Capri

punctis

ante & postea

quatuor punctis. duobus scz solstitialibus et duobus equino

in equinoctialibus

ctialibus adequantur suis ascensionibus id est quantum

Vna hora

libro

temporis sumit quarta zodiaci in suo ortu / in tanto

4 punctis

ante & postea

tempore quarta equinoctialis illi perterminalis ponitur.

quarta & equinoctialis

Sed tamen partes illarū quartarū variant. neq habet eq

libro

Solstitialibus

in octo

les ascensiones. sicut iā patebit Et est enī regula quilibet duo

4 punctis

arcus zodiaci equales et equaliter distantes ab aliquo qua

in octo

libro

tuor punctoꝝ iā dictoꝝ equales habent ascensiones

*Quidam enim de
signis signa
zodiaci & ag
nates in
libro*

Et ex hoc sequitur q signa opposita eqles habet ascen

libro

libro

siones Et hoc est q dicit lucan⁹ loquens de processu Ca

libro

libro

libro

libro

tonis in libyam versus equinoctiale. Non obliqua me

libro

libro

ant nec thaur⁹ rectior erit Scorpius. aut aries donat

libro

libro

libro

libro

libro

lua tpa libe Aut astrea iubet lētos descendere pisces Par

libro

libro

libro

libro

libro

geminis chiron. et idē quod charcinus ardens. Humi

libro

libro

libro

libro

libro

Capitulum in longioribus apertis. p. 2. 9^o
bus eglogeros. nec pl⁹ leo tollit vna. Sic dicit lucanus
Ind. v. m. d. y.

q̄ existētib⁹ sub equinoctiali signa opposita equales ha

bent ascensiones et occasum. Oppositio aut signorum

habet p hūc ōsum. Est li. ari. scor. tau. sa. gemi. ca-

pri. can. a. le. pis. vir. ¶ Et notandum q non valet

talis argumētatio. Isti duo arc⁹ sunt equales et simul

incipiunt oriri. et semp maior pars oritur de vno q̄ de

reliquo . et ergo ille arct⁹ cicius peroriet cui⁹ maior pars

semper oriebat̃. Instācia hyl⁹ argumētationis manife

Ita est in partib⁹ p^rdictarum quartarū. Si em̄ sumatur

quarta ps zodiaci que ē a principio arietis vsqz ad fines

geminorū semp maior: p̄s oritur de quarta zodiaci q̄ de

quarta equoctial sibi pterminali. et tñ ille due quarte

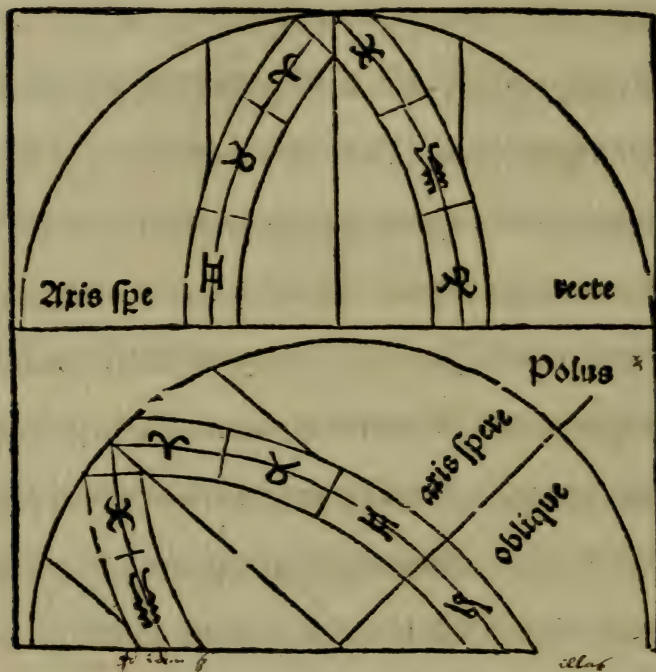
Simul perorant. Idē intellige de quarta zodiaci que est

a principio libre vsqz ad finē sagittarij. Item si sumat

quarta zodiaci que est a principio cācri vsq; in finez vir

ginis semp maior pars oritur de quarta equinoctialis.

¶ de quarta zodiaci illi pterminali. et tñ ille due quarta
 simul peroritur. Idem intellige de quarta zodiaci q̄
 est a primo puncto capricorni vsq; ad finem piscium.



Definitio de actu et
 in signis in spacio
 ita sunt astronomis
 huc de astronomia
 quoniam in actu et
 idcirco huc id de spacio ob
 q̄ ad habundantiam
 alia quoniam in actu
 ita ut spacio delectat a
 poles indet.

¶ In spera autē obliqua siue declini due medietates
 zodiaci adequantur suis ascensionibus. Et medietates di
 que sumuntur a duobus punctis equinoctialib; q̄a
 medietas zodiaci que est a principio arietis vsq; in fines

Virgini

ad 120

Septembris

virginis oritur cū medietate equinoctialis sibi cōtermini

120 p. principii arietis

nali. Similiter alia medietas zodiaci orit cū reliqua me

120 p. principii arietis

120 p. principii arietis

dietate equinoctialis. ¶ Partes aut illarū medietatum

*Orbita et unius mundi
in zodiaci tangit.*

variantur sū suas ascensiones. quoniā in illa medietate

zodiaci. que est a principio arietis vsq; in finē virginis

semp maior pars oritur de zodiaco q̄ de equinoctiali et

120 p. principii arietis

tamen ille medietates simul poiuntur. Et cōuerso con-

*medietas
reliq.*

tingit in reliqua medietate zodiaci. que est a principio li-

Septembris

bre vsq; ad finem piscium. semp enī maior pars oritur

120 p. principii arietis

de equinoctiali q̄ de zodiaco. ⁊ tamen ille medietates si

mul poiuntur. Vnde hic patet instātia facta manife-

120 p. principii arietis

stior p̄tra argumētationem supius dictā. ¶ Arc⁹ autē

120 p. principii arietis

qui succedūt arietī vsq; ad finem virginis in spera obli-

qua minūit ascēssiones suas supra ascēssiones eorundē ar-

120 p. principii arietis

cū i spera recta q̄ min⁹ orit de equinoctiali Et arc⁹ q̄ suc-

120 p. principii arietis

cedūt libe vsq; in finē pisciū i spera obliqua augēt ascē-

120 p. principii arietis

siones suas supra ascēssiones eorundem arcuū in spera

recta quia plus oritur de equinoctiali. Augent dico sim
 tantam quantitatem in quāta arcus succedentes arietis
 minuunt. ¶ Ex hoc patet q̄ duo arc⁹ equales. et op
 positi i spera declini habēt ascēſiones suas iūctas equa
 les ascēſionib⁹ eorundē arcuū in spera recta simul sum
 ptis q̄ quāta est diminutio ex vna parte. tanta est addi
 tio ex altera. Licet enī arcus inter se sint equales. tamē
 quantum vnus minor est tantū recuperat ali⁹. et sic
 p̄z adequatio. Regula quidē est i spera obliqua q̄ qui
 libet duo arc⁹ zodiaci equales et equaliter distātes ab al
 terutro pūctorū equinoctialiū equales habet ascēſiōes.

¶ Ex predictis etiā p̄z q̄ dies naturales sunt ineq̄les.

Est enī dies naturalis reuolutio eq̄noctialis circa terrā
 semel cū tāta zodiaci p̄tēſtas interim sol p̄trāsīt motu
 p̄prio p̄tra firmamētū Sz cū ascēſiōes illoz arcuū sint
 ineq̄les vt p̄z p̄dicta tā i spera recta q̄ obliq̄. ⁊ penes
 additamēta illaz ascēſionū p̄sideront. dies nat̄ales illi

*Quia si non esset sol
planum sit aequale*

de necessitate erunt inaequales In spera recta ppter vni-

*Quia si non esset
equale*

cam causas scz ppter obliquitatē zodiaci In spera vero

*Quia si non esset
obliqua*

obliqua propter duas causas scilicet propter obliquita-

tem zodiaci et propter obliquitatē horizonis obliqui.

*Quia si non esset
obliqua*

Tertia solet assignari causa centricitas circuli solis.

et si non esset

¶ Notandum etiā q sol tendēs a primo puncto capis-

icorni per arietē vsqz ad pūmū punctū cancri capen fir-

in arietē

mamenti describit. 182. parallelos. qui etiā paralleli

sest nō omnino sint circuli sed spera eū tñ non sit in hoc

in arietē

in cancri

in arietē

erro: sensibilis. in hoc vis non pstituat. si circuli appel-

in arietē

lentur. de nūero quoz circuloz sunt duo tropici. et vnus

equinoctialis. Item laz dictos circulos describit sol ra-

ptu firmamēti descēdens a primo pūcto cāen per libiaz

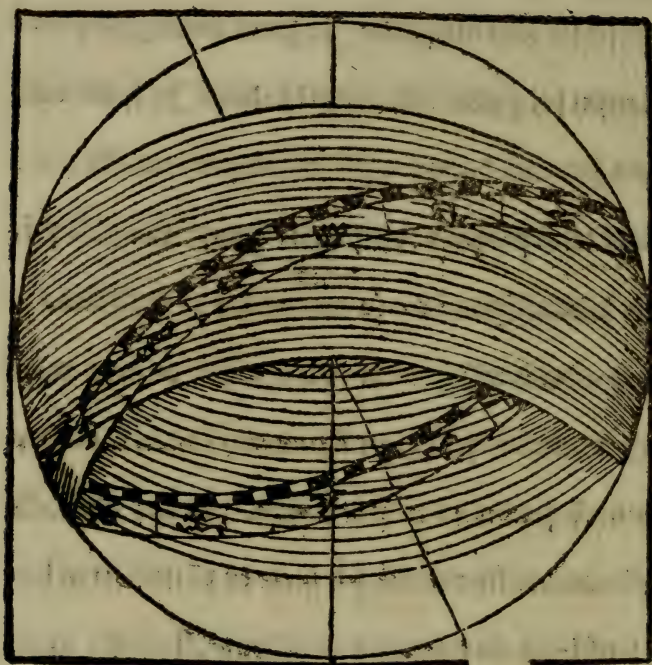
vsqz ad pūmū punctum capricorni. Et isti circuli di-

in arietē de arietē

ctum naturalū circuli appellantur. Arcus autem qui

sunt supra horizonem sunt arcus dierum artificialiuz.

Arcus vero qui sunt sub horizonte sunt arcus noctiuz.



¶ In sphaera igitur recta cum horizon sphaere recte transeat
per polos mundi/dividit omnes circulos istos in partes equa-
les. Unde tanti sunt arcus dierum quanti sunt arcus no-
ctium apud existentes sub equinoctiali. Unde patet quod exi-
stentibus sub equinoctiali in quacunque parte firmamenti sit

sol est semper equinoctialis. In sphaera autem declivi horizon
obliquus dividit solis equinoctialem in duas partes equa-
les.

les. Vnde quādo sol est in alterutro puncto:ū equino-

ctialium / tūc arcus diei equat arcui noctis. et est equi

noctiū in vniuersa terra. Omnes vero alios circulos di-

uidit horizon obliqu⁹ in ptes inequales. ita q^d in omni-

bus circulis qui sunt ab equinoctiali vsq^{ue} ad tropicū cā-

cri. et in ipso tropico cancri maior est arc⁹ diei q̄ noctis

id est arcus super horizontē q̄ sub horizonte. Vnde in

toto tempore quo sol mouetur a principio arietis p cā-

crum vsq^{ue} in finē virginis maiorant^{ur} dies supra noctes

et tanto plus quanto magis accedit sol ad cancrū ⁊ tā-

to minus quāto magis recedit. Ecdūerso autē se h^{ab}

bet de diebus et noctib⁹ dum sol est in signis australib⁹

In omnib⁹ alijs circul⁹ quos sol describit inter equino-

ctiales et tropicū capricorni maior est circul⁹ sub hori-

zonte et minor supra. Vñ arcus diei est minor q̄ arcus

noctis. et sū p^{ro}portionē arcū minorant^{ur} dies supra no-

ctes. et quanto circuli sunt p^{ro}pinquiores tropico hye-

Revised

22

40

[illegible]


uf

18

que ad. 100.

100 lb of the same
 bag of 100 lb
 100 lb of the same
 100 lb of the same

Sept 1822.



This image shows a blank, aged, cream-colored page, likely an endpaper or flyleaf of a book. The paper has a slightly textured appearance with some minor discoloration and dark smudges or stains, particularly along the left edge and bottom. The binding edge on the right is visible, showing the inner hinge of the book. There is no text or other markings on the page.

This image shows a blank, aged, cream-colored page, likely an endpaper or flyleaf of a book. The paper has a slightly textured appearance with some minor discoloration and dark smudges or stains, particularly along the left edge and bottom. The right edge of the page shows the binding of the book.

和

100

16. De signis Jodis
quod alijs non alijs
apparet et hoc est
septimum Vinylij

ice

[illegible]

18

bēt estates. sole scz existente in alterutro puncto ōi equi
noctialiū vel ppe Duas etiā habēt hyemes. scilicet so-

le existente in primis pūctis cancri et capricorni vel pro

pe Et hoc est quod dicit Alfragan⁹ q⁹ estas et hyemes.

scz nostre sunt illis vnins et eiusdem cōplexionis. quo-

nias duo tēpora que sunt nobis estas et hyemes sunt illis

due hyemes. Vnde ex illis versib⁹ Lucani ptz expositio

Deprensū est hūc esse locū quo circū⁹ alti. Solsticiū

medium signorū percutit orbem. Ibi em̄ appellat Lu-

canus circū⁹ alti solsticiū equinoctialem. in quo ptingunt

duo alta solsticia sub equinoctiali existētib⁹. De-

bem signorum appellat zodiacū quē medium id est me-

diatum hoc est diuisū in duo media equinoctialis. per-

cutit. id est diuidit. ¶ Illis etiā in anno ptingit ha-

bere quatuor vmbas. Cū em̄ sol sit in alterutro pun-

ctorū equinoctialiū / tūc in mane iacitur vmba eorū

versus occidentē In vespere vero econuerso. In meri-

^{et hinc in mea expositio}
^{deus qd est illa stella}
Die vero est illis umbra ppendicularis. cum sol sit supra
^{ab oriente usq; in finem vergens}

caput eorum. Cū autē sol est in signis septentrionalibus
^{propter dūm}
^{propter dūm}
tunc iacit umbra eorum versus austrum. Quando est
^{propter dūm}
^{propter dūm}

^{aliud vnde dicitur}
^{q; dicitur vnde dicitur}
^{q; dicitur vnde dicitur}
in australibus tūc iacitur vsus septentrionē. Illis
^{q; dicitur vnde dicitur}
autem oriuntur et occidunt stelle que sunt iuxta polos si-
^{q; dicitur vnde dicitur}
cut et quibusdam alijs habitantib; circa equinoctiales;

^{Deinde dicitur qd Lucanus}
Vnde Lucanus sic inquit Tum furor extremos mouit
^{q; dicitur vnde dicitur}
roman; hostes. Carmenosq; duces. quor; iam flexo

^{Deinde dicitur qd Lucanus}
in austrū Aether non totam mergi tamē aspicit arcton
^{q; dicitur vnde dicitur}
Lucet et erigua velox ubi nocte boetes Ergo mergitur
^{q; dicitur vnde dicitur}
et parū lucet. Item Duid; de eadē stella Tinguē ocea-

^{Deinde dicitur qd Lucanus}
ano custos erimantidos vise Nequioresq; suo sidere tur-
^{q; dicitur vnde dicitur}
bat aquas In situ autē nostro nunq; occidunt ille stelle
^{q; dicitur vnde dicitur}

Vnde virgilius Hic vertex nobis semp sublimis at illas
^{q; dicitur vnde dicitur}

Sub pedib; stir atq; vident manesq; profundi. et Lu-
^{q; dicitur vnde dicitur}
can; Aris in occidu; gemia clarissim; arcton Jec; vigil;
^{q; dicitur vnde dicitur}
in georgicis sic inq; Arctos oceanī metuētes eq; mergi

per quatuor se quatuor *In principio mundi*
duas habet estates. et duas hyemes. quatuor solsticia.

et quatuor *et quatuor*
et quatuor umbras. sicut erunt sub equinoctiali. Et in

itali *itali* *itali*
tali sicut dicit quidam Arabias esse. Unde Lucan⁹ loquens

de arabibus *de arabibus*
de arabibus venientibus Romam in auxilium Pompeio di-

cit *cit*
cit Ignotum vobis arabes venistis in orbem Umbras

mirari *mirari*
mirari nemo non ite sinistras Quonia in partibus suis

quandoque *quandoque*
quandoque erant illis umbræ dextre. quandoque sinistre:

quandoque *quandoque*
quandoque perpendicularares. quandoque orientales. quan-

doque *doque*
doque occidentales. Sed quando venerat Romam citra

tropicum *tropicum*
tropicum cætri tunc semper habebat umbras septentrionales

illis *illis*
illis siquidem quorum zenith est in tropico cætri co-

tingit *tingit*
tingit quod semel in anno transit sol per zenith capitis eorum

scilicet *scilicet*
scilicet quando est in primo puncto cancri et tunc in una

hora *hora*
hora diei unius totius anni est illis umbra perpendicularis

in tali *in tali*
In tali sicut dicitur Syene civitas Unde Lucan⁹. Um-

bras *bras*
bras nusquam flectente Syene hoc intellige in meridie unius

diei *diei*
diei et per residuum totius anni facit illis umbra septentrionalis

^{ultima p[ar]te}
 lapso. Ultima curvati p[re]cederet ungula thauri. Dicitur
 enī quidam q[uo]d ibi sumitur signum equinoce pio duode-
 cima parte zodiaci et p[ro] forma animalis. quod sūm ma-
 iorem partem sui est in signo q[uo]d denominat. Vñ thau-
 rus cum sit in zodiaco sūm maiorem sui partem. tamē ex-
 tendit pedem suum ultra tropicum cancri. et ita p[er]mis-
 ethopiaz. licet nulla pars zodiaci premat eam. Si enī
 pes thauri de quo loquitur antea extendat[ur] vers[us] equi-
 noctialem et esset in directo arietis vel alteri[us] signi. tūc
 premeret ab ariete vel virgine. et alijs signis q[uo]d patet p[er]
 circulum equinoctialem paralellum circumductum per
 zenith capitis isidorum ethiops. et arietem et virginem
 vel alia signa. Sed cum ratio p[hi]sica huic contrarietur
 non est ita essent dentigrati si intemperata nascerentur
 regide habilebili. Dicendū q[uo]d illa pars ethiopie. de qua
 loquit[ur] Lucan[us] est sub equinoctiali circulo. et q[uo]d pes thau-
 ri de quo loquitur extenditur d[omi]no equinoctialem. Sed

My rursus zodiacus

Figura

Distinguit tunc in signa cardinalia et regiones. Nam signa

cardinalia dicuntur duo signa in quibus pringunt solsticia. et

duo in quibus pringunt equinoctia Regiones autem appellantur signa

intermedia Et si hoc patet quod cum ethiopia sit sub equinoctiali non premitur ab aliqua regione. sed a duobus signis tunc

cardinalibus scilicet ariete et libra.

Illis autem quorum zenith

est in circulo arctico contingit in quolibet die et tempore anni

quod zenith capitis eorum est idem cum polo zodiaci et tunc habent

zodiacum sive eclipticam per horizontem Et hoc est quod dicit Al

fraganus quod ibi circulus zodiaci flectitur supra circulum hemis-

spheri Sed cum firmamentum continue moueatur circulus hori-

zontis interfecabit zodiacum in instanti et cum sint maximus

circuli in sphaera interfecabunt se in tres equales. Unde statim

medietas una zodiaci emergit supra horizontem et reliqua de-

primis sub horizontem subito. et hoc est quod dicit Alfraganus

quod ibi occidunt repetere sex signa. et reliqua sex oriuntur cum toto

equinoctiali Cum autem ecliptica sit horizon illorum. erit tropicus

Et sic sunt in generalibus
et occidūt Oriuntur prepostere sicut thaurus ante ari-
etem. Aries ante pisces. pisces ante aquarium. Et ta-
men signa his opposita oriuntur recto ordine. et occidūt
prepostere. ut scorpius ante libram. libra ante virginē
et tamen signa his opposita occidūt directe. illa scio

*Sic sunt et arietis
et arietis et arietis
et arietis et arietis
et arietis et arietis*

licet que oriuntur prepostere ut thaurus. Illis
autem quorum zenith est in polo arctico contingit qd il-
lorum horizon est idem quod equinoctialis Vnde cum
equinoctialis interfecet zodiacum in duas partes equa-
les. sic et illorum horizon relinquit medietatem zodia-
ci supra. et reliquam infra. Vnde cum sol decurrat per
illam medietatem. que est a principio arietis vsq in fi-
nem virginis. vnus erit dies continuus sine nocte. et
cum sol decurrat in illa medietate que est a principio li-
bre vsq in finem piscium erit nox vna continua sine die
Quare et vna medietas totius anni est vna dies artifi-
cialis et alia medietas est vna nox. Vnde totus annus

2^{de} a notte giunt

with Love

est ibi vnus dies naturalis Sed cum ibi nunq̃ magis. *De q̃o suspendet vn*

Anna Dine

Septembur

23. gradibus sol sub horizonte deprimatur / videtur qd Notum qd p^{re}dictum
fuit 1^o 2^o 3^o 4^o 5^o 6^o 7^o 8^o 9^o 10^o 11^o 12^o 13^o 14^o 15^o 16^o 17^o 18^o 19^o 20^o 21^o 22^o 23^o 24^o 25^o 26^o 27^o 28^o 29^o 30^o 31^o 32^o 33^o 34^o 35^o 36^o 37^o 38^o 39^o 40^o 41^o 42^o 43^o 44^o 45^o 46^o 47^o 48^o 49^o 50^o 51^o 52^o 53^o 54^o 55^o 56^o 57^o 58^o 59^o 60^o 61^o 62^o 63^o 64^o 65^o 66^o 67^o 68^o 69^o 70^o 71^o 72^o 73^o 74^o 75^o 76^o 77^o 78^o 79^o 80^o 81^o 82^o 83^o 84^o 85^o 86^o 87^o 88^o 89^o 90^o 91^o 92^o 93^o 94^o 95^o 96^o 97^o 98^o 99^o 100^o 101^o 102^o 103^o 104^o 105^o 106^o 107^o 108^o 109^o 110^o 111^o 112^o 113^o 114^o 115^o 116^o 117^o 118^o 119^o 120^o 121^o 122^o 123^o 124^o 125^o 126^o 127^o 128^o 129^o 130^o 131^o 132^o 133^o 134^o 135^o 136^o 137^o 138^o 139^o 140^o 141^o 142^o 143^o 144^o 145^o 146^o 147^o 148^o 149^o 150^o 151^o 152^o 153^o 154^o 155^o 156^o 157^o 158^o 159^o 160^o 161^o 162^o 163^o 164^o 165^o 166^o 167^o 168^o 169^o 170^o 171^o 172^o 173^o 174^o 175^o 176^o 177^o 178^o 179^o 180^o 181^o 182^o 183^o 184^o 185^o 186^o 187^o 188^o 189^o 190^o 191^o 192^o 193^o 194^o 195^o 196^o 197^o 198^o 199^o 200^o 201^o 202^o 203^o 204^o 205^o 206^o 207^o 208^o 209^o 210^o 211^o 212^o 213^o 214^o 215^o 216^o 217^o 218^o 219^o 220^o 221^o 222^o 223^o 224^o 225^o 226^o 227^o 228^o 229^o 230^o 231^o 232^o 233^o 234^o 235^o 236^o 237^o 238^o 239^o 240^o 241^o 242^o 243^o 244^o 245^o 246^o 247^o 248^o 249^o 250^o 251^o 252^o 253^o 254^o 255^o 256^o 257^o 258^o 259^o 260^o 261^o 262^o 263^o 264^o 265^o 266^o 267^o 268^o 269^o 270^o 271^o 272^o 273^o 274^o 275^o 276^o 277^o 278^o 279^o 280^o 281^o 282^o 283^o 284^o 285^o 286^o 287^o 288^o 289^o 290^o 291^o 292^o 293^o 294^o 295^o 296^o 297^o 298^o 299^o 300^o 301^o 302^o 303^o 304^o 305^o 306^o 307^o 308^o 309^o 310^o 311^o 312^o 313^o 314^o 315^o 316^o 317^o 318^o 319^o 320^o 321^o 322^o 323^o 324^o 325^o 326^o 327^o 328^o 329^o 330^o 331^o 332^o 333^o 334^o 335^o 336^o 337^o 338^o 339^o 340^o 341^o 342^o 343^o 344^o 345^o 346^o 347^o 348^o 349^o 350^o 351^o 352^o 353^o 354^o 355^o 356^o 357^o 358^o 359^o 360^o 361^o 362^o 363^o 364^o 365^o 366^o 367^o 368^o 369^o 370^o 371^o 372^o 373^o 374^o 375^o 376^o 377^o 378^o 379^o

Notum q[uod] p[ro]f[ess]ione
fuit i[n] v[er]bo d[omi]ni

glass highly magnified

July 1st 1861

The Earl of Argyll
 Secretary to the Admiralty

In loco mortis ipsius
Ca 29 ubi ingt.

Laminia got a large
 100° F. under 2 1/2 min

of *Tricholites*, *Scor. 2^o*
Tricholites.

.....

illis sic dies continetur sine nocte. Nam et nobis dies unus intra quatuordecim

173 - Illinois

Et hoc est reliquum scriptum
dicitur ante solis ortum supra horizontem. Hoc autem

and for q' which is not

est quantum ad vulgarem sensibilitatem. Non enim est di-

quod admodum p[ro]p[ri]um r[ati]onem.

re artificialis quantum ad physicam rationem nisi ab

926 *Long. p. 15*

fig. 10 of the same part.

92. *Scorpaenopsis* *Scorpaenopsis*

925

[illegible]

Birth of Jesus Christ in the year of our Lord 1800. 2000

iterum q̄ lux videtur ibi esse perpetua quoniam dies est

teſſe tolle

terram per

anteq̃ sol leuetur supra terram per .18. gradus vt di-

de Delano 71

cit Ptolomeus Alij vero magistri dicunt .30. scz per quā

— 1712 —

4^{to} *quodlibet* 2^{to} *quodlibet* 3^{to} *quodlibet*
 firmitatem unius signi. dicendum qd aer est ibi nubilosus

200

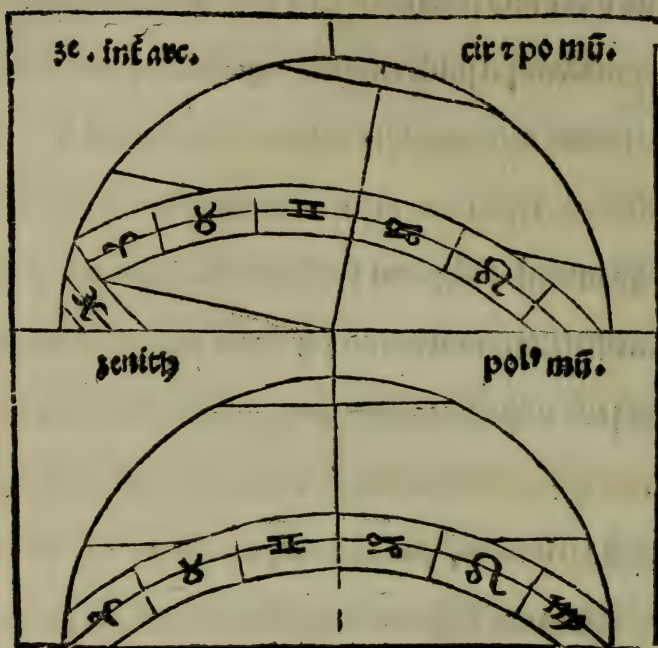
Yours truly
James O. Smith

Hampden St.

THE CHINESE
DISTRIBUTION

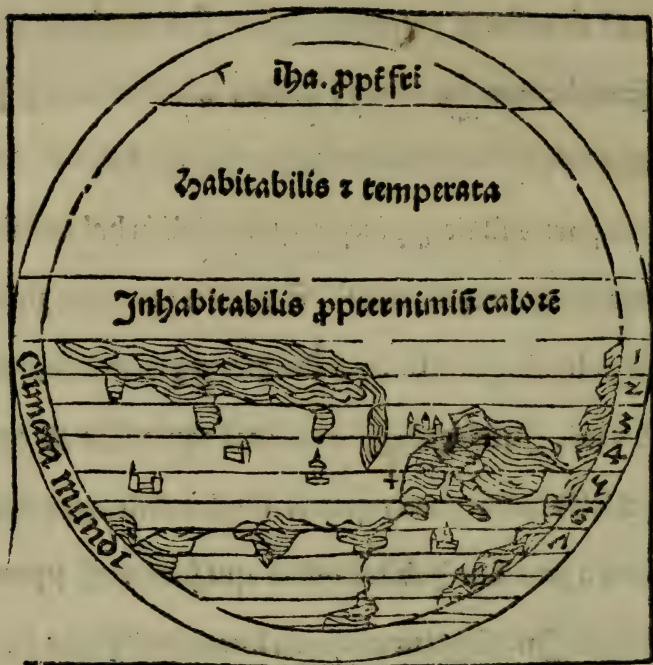
et ipſius. Quibus enim ſolatis ſol exiſtens debilis videtur.

§ 10



¶ Imaginetur autem quidam circulus in superficie terre directe suppositus equinoctiali. Intelligatur alius circulus in superficie terre transiens per orientem et occidentem et per polos mundi. Isti duo circuli intersecant sese in duobus locis ad angulos rectos sperales et diuidūt totā terrā in quatuor quartas. quarū vna est nostra habitabilis. illa scz q̄ intercipit inter semicirculū

ductū ab oriēte in occidentē in superficie equinoctialis
 et semicirculum ductum ab oriente in occidentem p po
 lum arcticū Nec tñ illa quarta tota est habitabil. quo
 niam partes illius ppinque equinoctiali in habitabiles
 sunt propter nimitū caloriē. Similiter ptes eius ppin-
 que polo arctico in habitabiles sunt ppter nimiam fri-
 giditatē. Intelligat ergo vna linea equidistās ab equi-
 noctiali diuidēs partes quarte inhabitabiles ppter ca-
 lorem a partibus habitabilibus. que sunt vers⁹ septen-
 trionem Intelligatur etiaz alia linea equidistans a po-
 lo arctico diuidens ptes quarte inhabitabiles. que sunt
 versus septentrionem. ppter frigus a partib⁹ habitabi-
 libus que sunt versus equinoctialē. Inter istas etiaz
 duas lineas extremas intelligant sex linee paralelle equi-
 noctiali. que cū duabus prioribus diuidunt partes to-
 talem quarte habitabilem in septem portiones que di-
 cuntur septem climata pro vt in presenti patet figura.



*clima in vocabulo
hic ostendit*

C Dicitur autem clima tantum spatium terre per quod
*et quod in unum
est per dies quod
est per dies quod*
 tum sensibilibiter variatur horologium. Idem namque
aliquid magis
 dies estivus aliquantulus. qui est in una regione. et sen-
est per dies quod
 sibilibiter est minor in hora diei media in regione propin-
 quior austro. Spacium igitur tantum quantum inci-
est per dies quod
 pit dies idem sensibilibiter variari in media hora ut pre-
 dictum est dicitur clima Nec est idem horologii cum prin-

Conclusio astronomica de iis climatibus quae sunt inter tropicos. I. Tropici sunt duo circuli qui sunt aequidistantes aequinoctiali. Tropici sunt duo circuli qui sunt aequidistantes aequinoctiali. Tropici sunt duo circuli qui sunt aequidistantes aequinoctiali.

cipio . et fine huius spaciū observatum . Hore enim diei

sensibiliter variantur quare et horologum

¶ Medium igitur primi climatis est ubi maxima diei
prolixitas est . 13 . horarum et elevatio poli mundi su

pra circulum hemispherij gradibus . 16 . et dicitur clima
dyameroes . Inicium eius est ubi diei maioris prolixi

tas est . 12 . horarum . et dimidie et quarte unius hore .

et elevatur polus supra horizontem gradibus . 12 . et di

midie et quarte unius gradus Et extenditur eius lati

tudo usq ad locum ubi longitudo prolixioris diei est 2

13 . horarum est et quarte unius et elevatur polus su

pra horizontem gradibus . 20 . et dimidio . quod spaciū

terre est . 440 . miliaria . **¶** Medium aut secundi cli

matris est ubi maior dies est . 13 . horarum et dimidie . et

elevatio poli supra horizontem . 24 . graduum . et quae

te partis unius gradus . Et dicitur clima diasynes . la

titudo vero eius est ex termino primi climatis usq ad lo

Observatio de primis climatibus. I. Tropici sunt duo circuli qui sunt aequidistantes aequinoctiali. Tropici sunt duo circuli qui sunt aequidistantes aequinoctiali. Tropici sunt duo circuli qui sunt aequidistantes aequinoctiali.

cum ubi sit dies prolixior. 13. horarū et dimidie et quar-
te partis vnius hore. et eleuatur polus. 27. gradibus
et dimidio. et spaciū terre est. 400. miliarium.

¶ Medium tercij climatis est ubi sit longitudo pro-
lixioris diei. 14. horarum. et eleuatio poli supra hori-
zontem. 30. graduum et dimidij. et quarte vnius parti-
s. Et dicitur clima dialysa duos latitudo eius est ex
termino secundi climatis vsq; ubi prolixior dies ē. 14.
horarum. et quarte vnius et altitudo poli. 33. gradus
et duarum tertiarum. quod spaciū terre est. 350. mili-
arium.

¶ Medium quatti climatis est ubi maio-
ris diei prolixitas est. 14. horarum et dimidie et aris la-
tutudo. 16. graduum et duarum quintarum. Et dicitur
diathodos. latitudo vero eius est ex termino tercij
climatis vsq; ubi prolixitas maioris diei est. 14. horarū
et dimidie. et quarte partis vnius. eleuatio autē poli.
39. graduum. quod spaciū terre est. 300. miliarū.

¶ Medium quinti climatis est ubi maior dies est. 15.

horarum et elevatio poli. 41. grad⁹ et tertie unius. Et

dicitur clima diatomes. latitudo vero eius est ex termi

no quarti climatis usq; ubi prolixitas diei sit. 15. ho

rarum. et quarte unius. et elevatio aris. 43. gradunz

et dimidij quod spacium terre est. 255. miliarium.

¶ Medium sexti climatis est ubi prolixior dies est. 15.

horarum et dimidie. et elevatur polus super horizontē.

45 gradibus et duabus quintis unius Et dicitur clima

diaborystenes. Latitudo vero eius est ex termino quin

ti climatis usq; ubi longitudo diei prolixior est. 15. ho

rarum et dimidie et quarte unius. et aris elevatio. 47.

gradunz et quarte unius que distātia terre est. 212. mi

liarium. **¶** Mediū autē septimi climatis est ubi maior

plixitas diei est. 16 horaz. et elevatio poli supra hori

zontē. 48. gradunz et duaz tertiay. Et dicit clima dia

tripheos Latitudo vero ei⁹ est ex termino septi climatis

vsq; ubi maxima dies est. 16. horarum et quarte vni⁹.
et eleuatur polus mundi supra horizontem. 50. gradib⁹
bus et dimidio. quod spaciū terre est. 185. miliarium

¶ Ultra autem huius septimi climatis terminū. licet
plures sint insule. et hominum habitatiōes. quicquid
tamē sit. quoniā prauē est habitatiōes sub climate non
computantur. Omnis itaq; inter terminū initialē cli-
matū et finalem eorundē diuersitas est triū horarū et di-
midie. et ex eleuatiōe poli supra horizontē. 38. gradib⁹

Sic igitū patet vnus cuiusq; climatis latitudo a princi-
pio ipsi⁹ vers⁹ equinoctialem vsq; in finem eiusdem ver-
sus polum arcticū etq; primi climatis latitudo est mai-
or latitudine secundi. et sic deinceps. Longitudo autē
climatis potest appellari linea ducta ab oriente in occi-
dentē equidistās ab equinoctiali. Vñ longitudo primi
climatis est maior lōgitudine scđi. et sic deinceps quod
contingit propter angustiam spere.

Tabula Climatum

Tabula Climatum rectificata . 1491 . Inicia climatum	Elevatio Gradia pleritas poli latitudia diei gra mi climatu ho . mi .			
1 Amieci isula Garbata mds	0	0	6020	12 0
2 Modi isula emporia ethi.	8	36	5681	12 30
3 Ethiopia supra egiptum	16	43	5227	13 0
4 Egiptus thebais	24	11	4538	13 30
5 Judea Iherusalem	30	40	4025	14 0
6 Sicilia regnu granato	36	25	3500	14 30
7 Apulia Roma	41	24	3278	15 0
8 Croacio Lombardia	45	15	3197	15 30
9 Moravia Bavaria	48	49	2112	16 0
10 Misa Turingia	51	50	1867	16 30
11 Saronia Bestualia	54	30	1516	17 0
12 Prussia Holsatia	56	40	1283	17 30
13 Dacia Scotia	58	30	1167	18 0
14 Scania Livonia	60	10	992	18 13
15 Gotia Zibernia	61	35	653	19 0
16 Hollandia Thile insula	62	31	631	19 30
17 Suecia Mare gotticum	63	25	583	20 0
18 Noruegia	64	15	513	20 30
19 Ingravelande	64	59	362	21 0
20 Vermelande	65	30	350	21 30
21 Promontoria noruegie	66	0	175	22 0
22 Promontoria noruegi	66	15	82	22 30
23 Gotia orientalis	66	22	35	23 0
24 et vltimu Pilappenlædt	66	25	23	23 30
Finis vltimi et. 24 . cliatis	66	27	0	24 0

Capitulū quartū de circulis et motib⁹ planetarū . et de causis eclipsiū solis et lune.

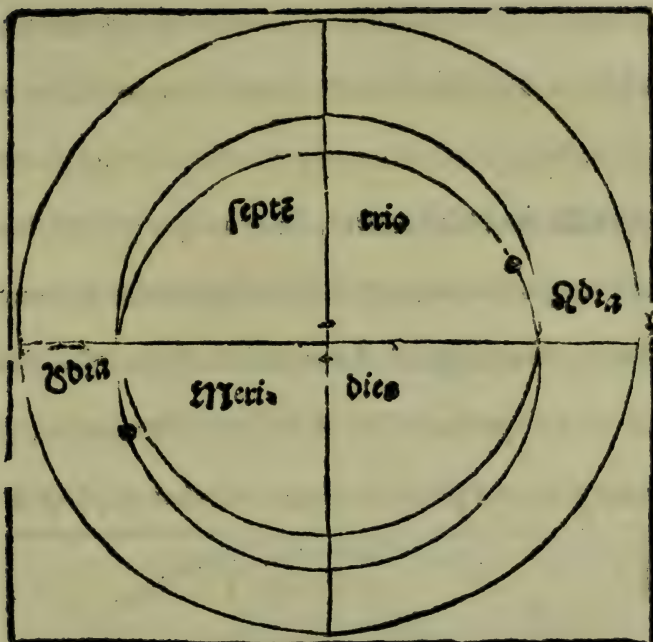
Etandum q^d sol habet unicū circulus p^{er} quem
mouetur in superficie linee ecliptice . et est ecētri-
cus . Ecētric⁹ quidez circul⁹ dicit^r nō omnis circulus .
sed solum talis qui diuidens terram in duas p^{ar}tes equa-
les non habet centrum suū cum centro terre sed extra
Punctus autē in ecētrico qui maxime accedit ad firma-
mentum appellatur Aur quod interpretatur eleuatio .
Punctus vero oppositus qui maxime remotioris est a
firmamēto dicit^r oppositio augis . Solis autē ab occidē-
te in orientem duo sunt motus . quorū vnus est ei pro-
pius in circulo suo ecētrico . quo mouetur in omni die
ac nocte . 60 . minutis fere . Alius vero tardior est mot⁹
spere ipsius supra polos axis circuli signorū et est equa-
lis motui spere stellarū fixarum . scilicet in . 100 . annis
gradu vno Et his itaq^{ue} duobus motib⁹ colligit^r cursus

elus in circulo signoz ab occidente in orientē . per quez
 abscindit circulū signoz in 365 . dieb⁹ et quarta vnus
 diei fere / p̄ter rem modicā que nulli⁹ est sensibili⁹ atis .



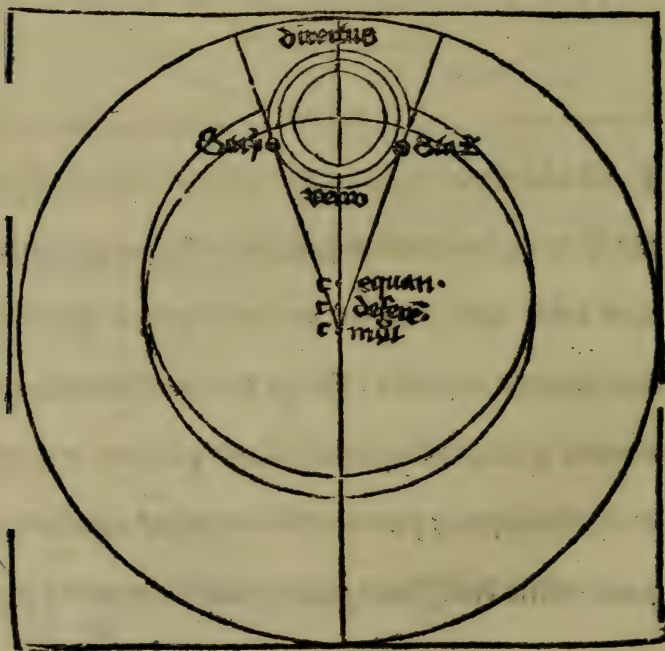
¶ Quilibet autem planeta tres habet circulos p̄ter
 solem . scz equātem deferētem ⁊ epicyclū Equās quidē
 lune est circulus p̄centricus cum terra . et est in superfi-
 cie ecliptice . Eius vero deferens est circul⁹ ecētric⁹ nec

est in superficie ecliptice imo una eius medietas declinat
versus septentrionem altera versus austrum et interse-
cat deferens equantem in duobus locis. et figura inter-
sectionis appellatur draco. quoniam lata est in medio
et angustior versus finem. Intersectio igitur illa per quam
mouetur luna ab austro in aquilonem appellatur ca-
put draconis. Reliqua vero intersectio per quam mo-
uetur a septentrione in austrum dicitur cauda draconis.
Deferentes quidem et equantes cuiuslibet planete sunt
equales. ¶ Et sciendum quod tam deferens quam equans
Saturni. Iovis. Martis. Veneris et Mercurij sunt
eccentrici et extra superficies ecliptice. et tamen illi duo
sunt in eadem superficie.

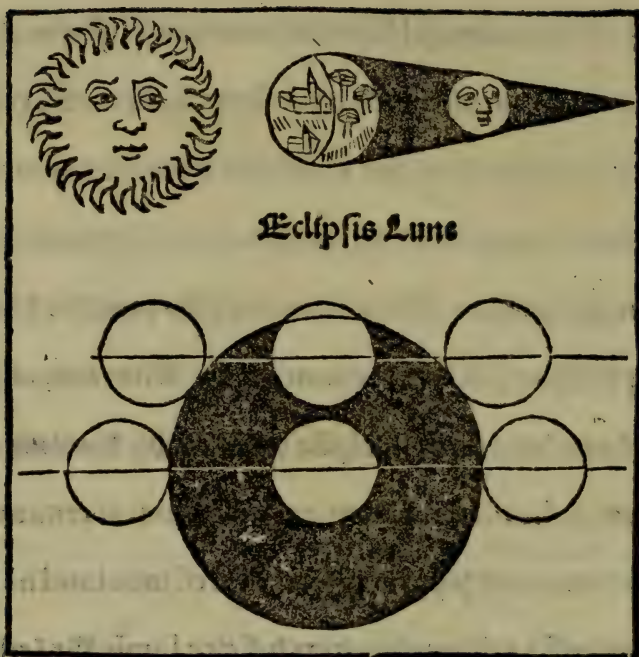


¶ Quilibet etiam planeta p̄ter solem habet epicycluz
 Et est epicyclus circulus parvus per cuius circumferen-
 tiam deferē corp⁹ planete . et centrū epicycli sp̄ deferē in
 circūferentia deferētis . Si igit̄ due linee ducant̄ a cētro
 terre ita q̄ includāt epicyclū alicui⁹ planete . vna ex pte
 orientis reliqua ex parte occidētis punct⁹ contactus ex
 parte oriētis dicat̄ statio prima p̄ter⁹ vō p̄act⁹ ex pte oc-

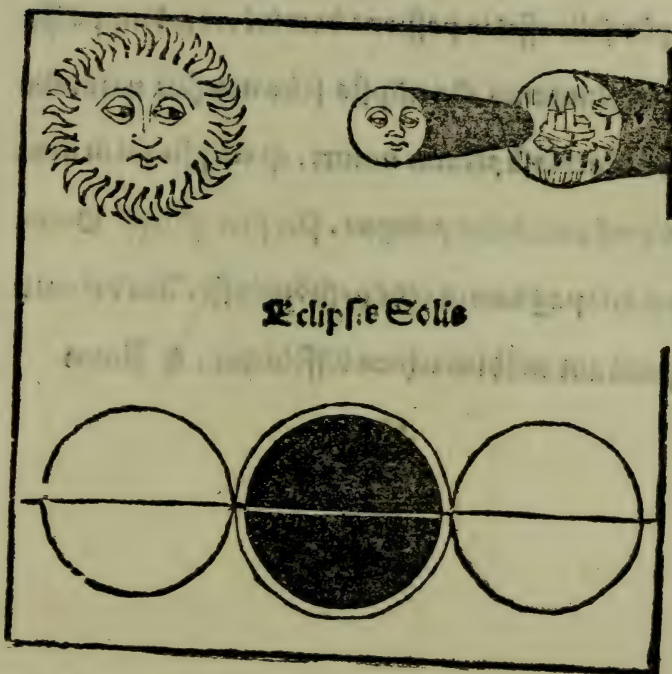
eidentis dicūt statio scda Et qñ planeta est in alterutra
 illarū stationū dī stationari⁹. Arcus vō epicycli supe-
 rior inter duas statioēs intercept⁹ dī directio ⁊ qñ plane-
 ta est in illo tunc dicūt direct⁹. Arc⁹ vō epicycli inferior
 inter duas statioēs intercept⁹ dī retrogradatio et plane-
 ta ibi erit dī retrograd⁹. Lune aut nō assignat statō dī
 rectio vī retrogradatio Vñ nō dī lūa statōnaria direct⁹
 vī retrograda propter velocitatē mot⁹ eius in epicyclo



¶ Cum autem sol sit maior terra necesse est q̄ medie-
tas spere terre ad minus a sole semp illuminetur. et um-
bra terre extensa in aere comatilis minuatur in rotun-
ditate donec deficiat in superficie circuli signorum ver-
sus nadir solis. Est autem nadir solis punctus directus
oppositus soli in firmamento. ¶ Unde cum in ple-
nilunio luna fuerit in capite vel in cauda draconis sub
nadir solis tūc terra interponet soli et lune et conus um-
bre terre cadet supra corp⁹ lune Vñ cū luna lumē nō ha-
beat nisi a sole in rei veritate deficit a lumie Et ē eclipsē
generalis in omni terra si fuerit in capite vel cauda dra-
conis directe / particularē vō eclipsi si fuerit ppe vel in-
fra metas determinatas eclipsi Et semp in plenilunio
vel circa ptingit eclipsi Unde cū in qualibet oppositi-
one hoc est in plenilunio nō sit luna in capite vel cauda
draconis nec supposita nadir solis nō est necesse in quo-
libet plenilunio pati eclipsim vt patet in p̄senti figura.



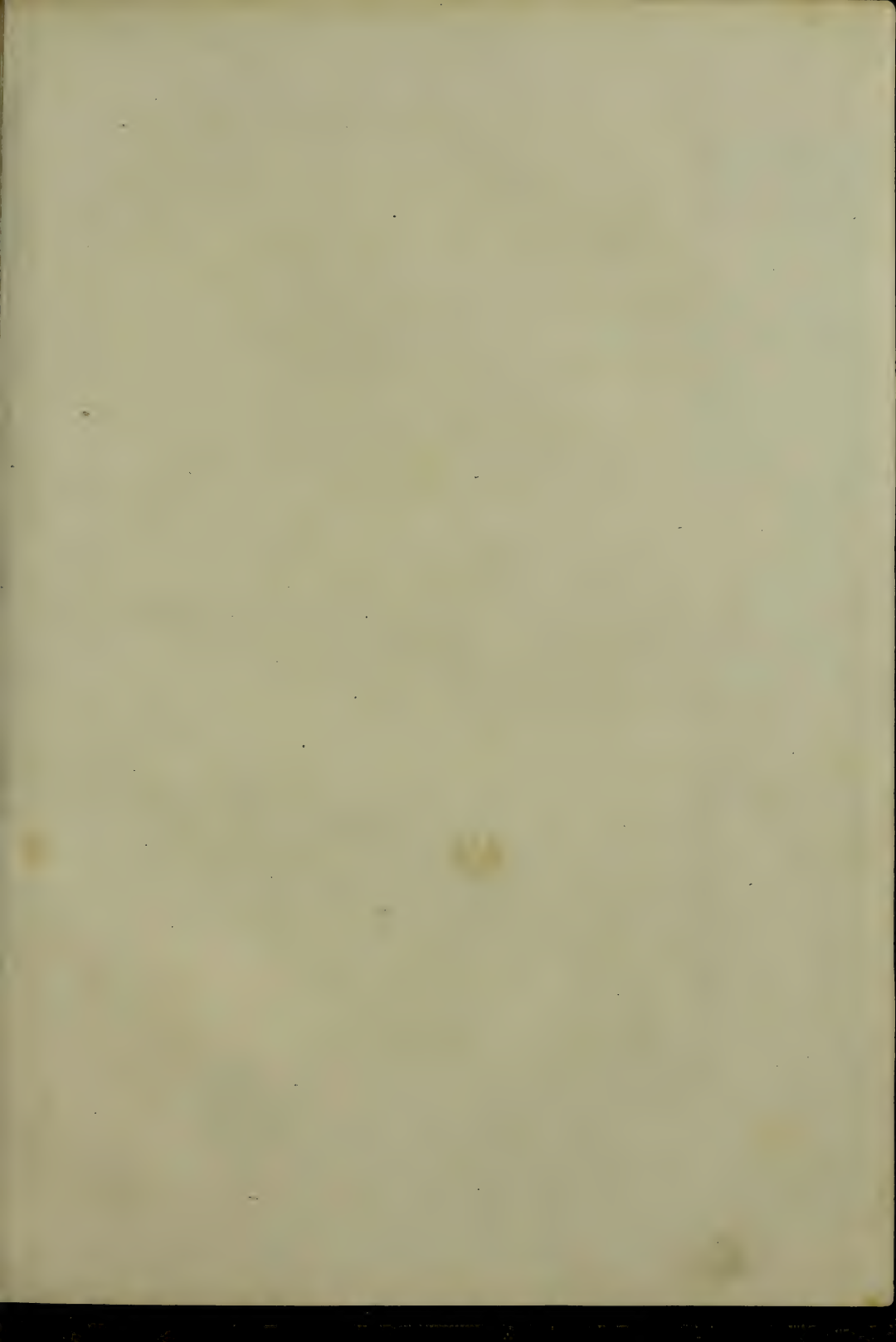
Cū autē luna fuerit in capite vel cauda draconis vel
 ppe metas supradictas et in cōiūctiōe cū sole tūc corpus
 lune interponet iter aspectū nostrū ⁊ corp⁹ solare Vñ ob
 umbrabit nobis claritatē solis. ⁊ ita sol paciet̃ eclipsis
 nō q̃ deficiat lumīe. s̃ deficiet nob̃ ppter interpositiōes
 lune inter aspectū nostrū et solē Et his patet q̃ semp de
 bet esse eclipsis solis in coniunctione siue in nouilunio.

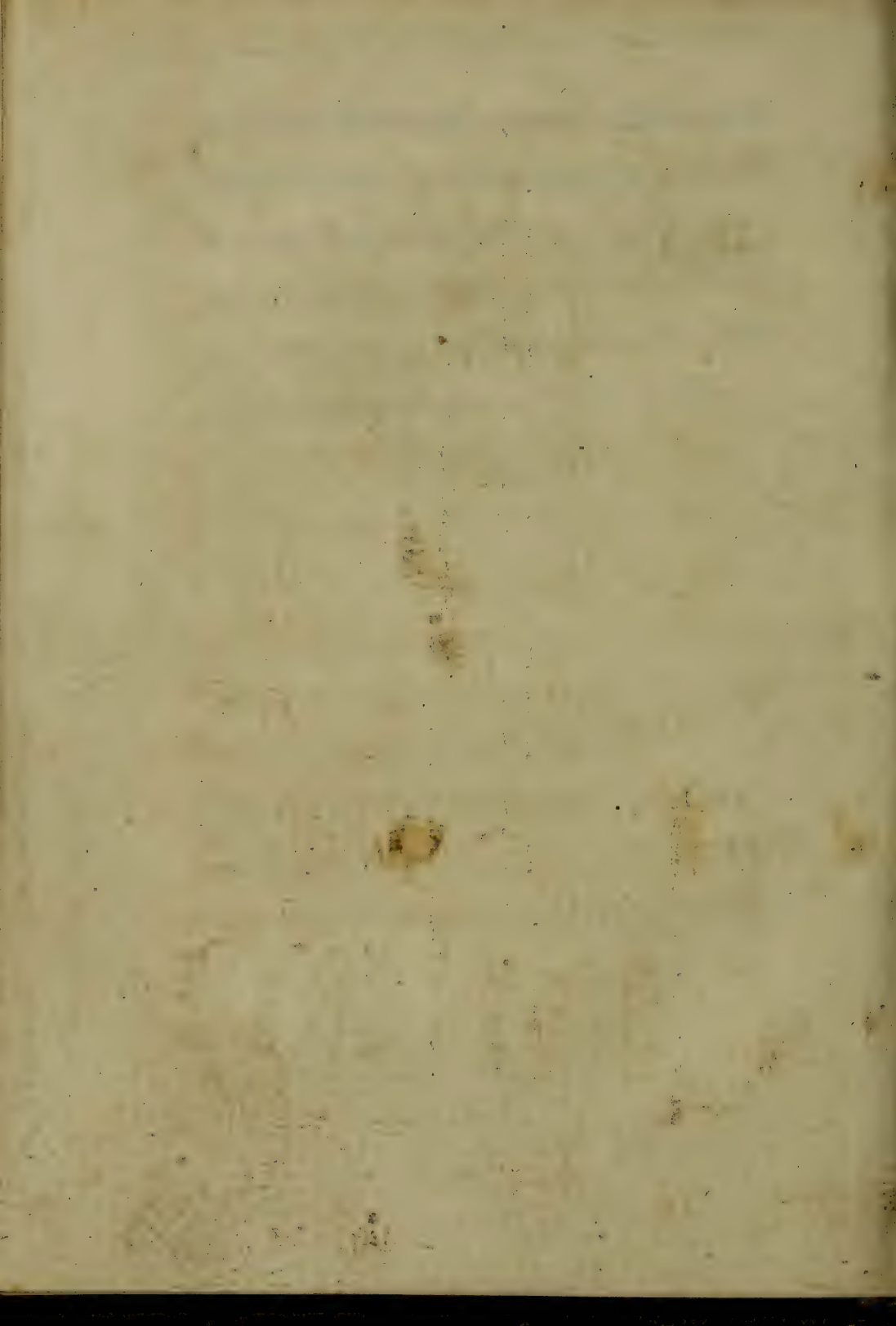


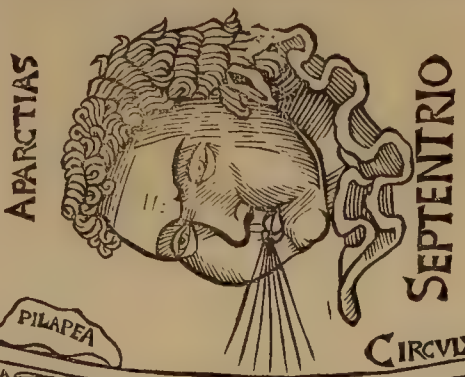
¶ Notandū etiam q̄ quando est eclipsis lune est eclī-
psis in omni terra. Sed quando est eclipsis solis ne-
quaq̄ imo in vno climate est eclipsis solis. ⁊ in alio nō.
quod contingit propter diuersitatem aspectus in diuer-
sis climatibus Vnde Virgilius elegantissime naturę
vtriusq̄ eclipsis sub compendio tetigit dicens. Defe-
ctus lune varios solisq̄ labores Et predictū patet q̄ cū

eclipsis solis esset in passione domini . et eadem passio
esset in plenilunio . illa eclipsis solis non fuit naturalis
Imo miraculosa p'tratia nature . q' eclipsis sol in noui
lunio vel circa debet p'tingere . Propter q'd legi' Diony
sium ariopagitam in eadē passioe dixisse . Aut de' natu
re parit' aut mūdi machina dissoluetur . ¶ Amen

Sinis.

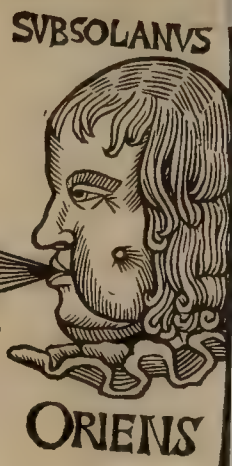






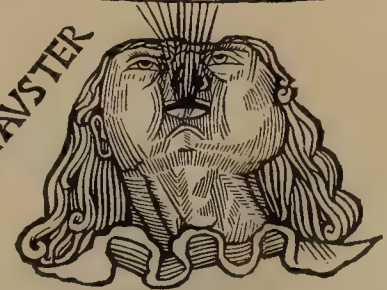
SEPTENTRIO

APARCTIAS



SVBSOLANVS

ORIENTIS



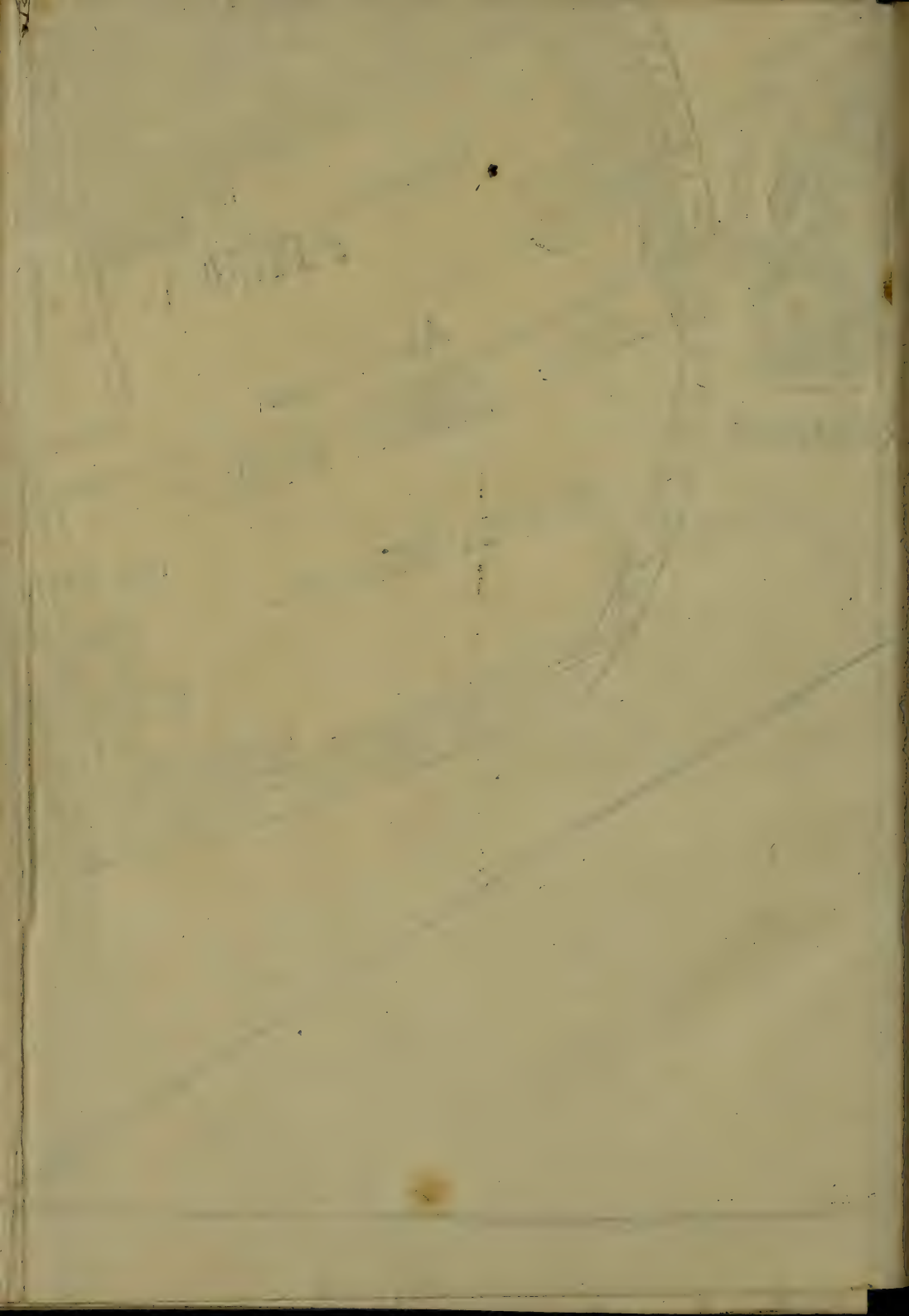
MERIDIES

NCTVS VELAVSTER



OCCIDENS

ZEPHYRVS VEL FAVNI



JOHANNES DE SACROBUSCO. *Opusculum Sphaericum*. c. 1498.*Apparently unrecorded.*

Printed with gothic types, in quarto a leaf is 202 X 142 mm., and the form, 17 lines to a page. It has 41 text measures 144 X 89 mm. Numerous leaves, the last blank. The size of the interlinear and marginal notes.

THIS volume seems to be nearest to Hain 14,118. Like that edition, it has a five-line title, while in most of the other editions the title consists of three or four lines. The line division, however, is different; it is given here in full: *Opusculum Johannis de sacrobusto sphericum. cum figuris optimis et novis. textum in se. sine ambiguitate. te declarantibus.* The frontispiece is a full-page woodcut showing two angels by the side of a celestial globe; and the text is illustrated with 27 diagrams. At the end, there is a large folding map of the world, similar to that in Georg Reisch's *Margarita Philosophica*, Freiburg 1503. The difference is in the lettering, the border, and the shading of the seas; and further this map has only four heads at the sides instead of twelve. It may be the earliest state of the Reisch map; on the other hand, since the binding is modern and the paper differs from that of the text, it may have been added later.

Johannes de Sacrobusco (Sacro Bosco, Sacrobusto) was an English monk whose name was John Holywood (Holywalde, Holyfax). He was probably born at Halifax in Yorkshire, and is said to have studied at Oxford. Afterwards he taught in Paris, where he died in 1256.

The *Opusculum Sphaericum* or *Sphaera Mundi*, brief as it is, comprises four books. The first treats of the divisions of the sphere, which may be "according to substance" or "according to form." As regards the former, the sphere is further divided into nine heavens — the *primum mobile*, the sphere of the fixed stars, and the spheres of the seven planets. From the point of view of form, the spheres are either straight or oblique, determined by the intersection of the equinoctial. The second book describes the equinoctial circle, the poles, and the circle of the zodiac. It explains the solar and lunar eclipses, and the positions of the planets in the signs of the zodiac. The third book is devoted to the rising and the setting of the zodiacal signs in both the straight and the oblique spheres. It also discusses the natural and the artificial day; the length of the days and nights in the different zones; and the connection between climates and the length of days. Finally, the last book deals with the two motions of the sun: the eccentric diurnal motion and the slow motion of one degree in a hundred years; with the motions of the planets, and their stations according to their positions in the epicycle; and with the eclipses of the moon and the sun, pointing out that the eclipse during the Crucifixion was not natural but miraculous.

"The oldest work on astronomy that Europe produced," Delambre wrote, "was Sacrobusco's *Sphaera Mundi*, a work which was for long a classic but which is nonetheless mediocre. The study of astronomy had by his time fallen into oblivion, due to the difficulty of procuring and understanding the works of the ancient astronomers. Sacrobusco, in order to revive this study, composed a summary, in which he contented himself with extracting the most elementary ideas from the writings of Ptolemy, Alfragan, and Albategnius. He added nothing of his own; he never practised astronomy; he merely wanted to provide a sort of introduction to more learned books. Yet his superficial abridgement enjoyed for a long time a great reputation; and, since he failed to develop the ideas which he discussed even to the point of intelligibility, he had the honor of being frequently commented upon."

The importance of the work, then, is not in its contents but in the part it played in the intellectual life of the Middle Ages. And from this point of view, the little book, although its intrinsic value was negligible, deserves high respect. After the ignorance of the early Middle Ages it represented a return to the more enlightened cosmogony of the Greeks. The Ptolemaic system, in spite of its erroneousess, at least offered a scientific view of the universe. It affirmed that the earth was a globe and that around its stationary body were revolving in circles and epicycles the sun, the planets, and the stars, all fixed at an equal distance on a solid sphere. Such a theory was certainly in advance of the Dark Ages, which thought of the earth as a vast circular plane surrounded by water, with Jerusalem at its center, and the heavens above resting on pillars like a tent, with the twinkling little stars carried across by their appointed angels.

The system propounded in Ptolemy's *Almagest*, in the second century of our era, was already a retrogression. Aristarchus of Samos had worked out in the third century B. C. a scientific explanation of the heliocentric theory, which was credited even farther back to Pythagoras and his disciples. Ptolemy himself had meditated the possibility of the earth's motion. The seventh chapter of the introduction to his work, in which he brushes aside the arguments for such a motion, is one of the most tantalizing documents ever written. First he refers to the evidence of the senses; then he points out that there is no reason why the air should participate in the earth's movement — the velocity of the latter would be, in any case, so immense that everything not nailed down hard and fast would be left behind. Yet even the Ptolemaic system was too much for the early Middle Ages; with everything else it was swept under the debris of the Greco-Roman civilization. A heliocentric view of the universe could not have appeared more absurd to the Church Fathers than the geocentric; and it would have been easier to demolish by ridicule.

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It was through the Arabs that Europe saw again the dawn of astronomical science. In the ninth century, during the reign of Harun Al Rashid and his successor Al Mamun, Damascus and Bagdad became centers of learning. Scholars were busy translating the works of Aristotle, Euclid, and Ptolemy, adding independent observations to the knowledge of the Greeks. Through Spain, where they had carried their learning with them, they came into contact with Western Christianity. The intolerance of the latter towards the Ptolemaic theory temporarily died down when, in 999, Gerbert became Pope as Sylvester II. The Pope, a former professor at Ravenna, believed in the spherical shape of the earth; he himself found delight in constructing globes of the earth and the heavenly bodies. The awakening, however, was slow. The first translations of astronomical works into Latin were not made till the twelfth century. By then a number of men journeyed from Italy, France, and England to Cordoba and Toledo, to learn Arabic and read the Greek authors in that language.

Sacrobusco's *Sphaera Mundi* was the first fruit of the Greco-Arabic inspiration, and its influence was universal. For nearly four hundred years the confused little compilation was used as a text-book throughout Europe. Numerous manuscript copies still exist, and no less than twenty-four editions were printed during the incunabula period. It continued to be published till the middle of the seventeenth century, a hundred years after the appearance of Copernicus's *De Revolutionibus Caelestibus*. And as the time went on, the brief treatise grew to a huge folio. Editors, emendators, scholiasts, and all sorts of professors flocked around Sacrobusco, smothering his slender text with their disputations, expositions, and paraphrases. The last edition looks like a convention of all the astronomers and astrologers of the Middle Ages! Who ever hear of Bartolomaeus Vespucius, Theodosius of Tripoli, Joannes Blanchinus, or Franciscus Capuanus? Of Prosdocimo de Beldomandi, Lucas Guaricus, or Calo Calonymus, rabbi of Naples? There are, of course, names which one is glad to encounter in the vast congregation: here is Michael Scott, the Scotch "magician"; Robert Grosseteste, bishop of Lincoln; Pierre d'Ailly, the learned cardinal; Georg Peurbach, the inventor of the sine tables, and especially Regiomontanus, a truer astronomer than anyone else before Copernicus.

The Library has a large group of these editions. Besides the present volume, it has three incunabula printed at Venice — by Erhard Ratdoit in 1485, by Octavianus Scotus in 1490, and by Simon Bevilacqua in 1499. Of the sixteenth-century editions the Library has nine printed in Italy, one in Germany, five in France, three in Spain, and one in the Netherlands. Most of these are in Latin, and the rest in Italian or Spanish.

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A GROUP OF INCUNABULA

the meaning of ratio and proportion; ratio is "a relation of two terms to each other," and proportion is "the bringing together of two or more relations" or "a similarity of ratios." There are various kinds of ratios, such as multiple, superparticular, superpartient; and there are also various kinds of proportions, such as rational and irrational, continuous and separated. Bradwardine's tract is a mere summary of this extremely complicated science, treating only twelve of the innumerable propositions of Euclid. It is mainly interesting as showing the state of mathematical and geometrical knowledge in England in the fourteenth century. One must remember, however, that one of the earliest exponents of Euclid in Western Europe was the Englishman Athelhard, who in the early twelfth century made a translation of the *Elements* from the Arabic into Latin.

Besides the *Tractatus Proportionum*, Bradwardine was the author of the *Arithmetica Speculativa*, *Geometrica Speculativa*, and the *Quadratura Circuli*. All these works long enjoyed high esteem and were printed many times in the fifteenth and the first half of the sixteenth century.

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WOLFGANG STÖCKEL (?)

JOHANNES DE SACROBUSCO. *Opusculum Sphaericum*. c. 1498.

Apparently unrecorded.

Printed with gothic types, in quarto a leaf is 202 × 142 mm., and the form, 17 lines to a page. It has 41 text measures 144 × 89 mm. Numerous leaves, the last blank. The size of ous interlinear and marginal notes.

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MORE BOOKS: A BULLETIN

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ZOLTÁN HARASZTI

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